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ABSTRACT

This publication is a catalogue of resources addressed specifically to school teachers. The essence of the man-made environment is what man builds--cities, streets, houses, parks, and the spaces that connect them. Thus, the focus of the materials in this sourcebook is on what man builds, why he builds , how he builds, and how he and the environment affect one another. Included are interdisciplinary materials for use in both elementary and secondary schools. Section 1 contains information on reference material for the teacher in developing and conducting a program on the built environment--teacher guides, resource and training centers, and background materials. The second section describes learning resources for use in and out of the classroom. Included are materials that pertain specifically to the built environment and other more comprehensive program which give a thorough treatment of the built environment as an essential component of the total environment. The third section contains descriptions of some current projects on the environment for which no curriculum materials are available but which may provide additional teaching and learning suggestions. (BT)

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Learning About the Built Environment

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ED114269

A Sourcebook in Environmental Education for use at the Elementary and Secondary Levels

SE019 346

Learning About the Built Environment

A report from
Educational Facilities
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of Elementary
School Principals

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The Rockefeller Family Fund is a charitable foundation established in 1967. One of its program areas is the field of public aesthetics. Among its interests in this field has been a concern for improving education about the man-made environment.

Educational Facilities Laboratories is a nonprofit corporation established in 1958 by The Ford Foundation to encourage and guide constructive changes in education and related facilities.

The National Association of Elementary School Principals is a nonprofit organization established in 1921 to improve elementary school administration and promote quality education for children.

Designed by Keith Godard of Works

Copies of this publication are available for $1.00, prepaid, from the National Association of Elementary School Principals, 1801 North Moore Street, Arlington, Virginia, 22209.

Foreword

This is the first EFL publication addressed specifically to school teachers. Our usual constituents are administrators and architects, but in this report we have moved our viewpoint from the ways to improve the environment for education to ways for making students aware of the environment in which they learn, live, and play. Only in the past few years have educators directed students toward thinking about the built environment. Before then, environmental education concerned itself primarily with natural phenomena.

Learning About the Built Environment is a catalogue of resources for teachers and students. We believe it may be the most comprehensive compilation on this subject and could save teachers hours of time researching book titles, games, or programs to use themselves or in their classrooms. The book was researched and written by Dr. Aase Eriksen of Educational Futures, Inc., under EFL's direction and with financial support from the Rockefeller Family Fund.

Educational Facilities Laboratories

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Cover: The brick is a commonly seen component of the built environment. Sizes don't vary, but colors and textures do. The large indentation is called a frog (but no one knows why) and is filled with mortar to hold courses of bricks together in a wall. Manufacturers stamp their company's initials on the brick.

Learning About The Built Environment

Environmental education is rapidly being integrated into curricula at both elementary and secondary levels. Until recently the natural environment has been its focus, dealing mainly with conservation measures and ecological concerns. The man-made environment has been studied, for the most part, only as it impinges upon our natural lands and resources. Indeed, man-made environment has almost become synonymous with pollution and destruction of the natural environment. Thus less effort has gone into the study of our man-made environment in and of itself as a legitimate and positive source of learning and enjoyment. It is this gap that has provided the impetus for this reference book on Learning About the Built Environment.

The essence of the man-made environment is, in fact, what man builds -- cities, streets, houses, parks and the spaces that connect them. Thus, the focus of the materials in

this sourcebook is on what man builds, why he builds, how he builds, and how he and the environment affect one another.

There are several reasons for concentrating on the built environment. First, and most simply, as a learning resource the built environment offers a broad range of experiences. For any subject area, possibilities abound for illustrating concepts and developing skills -- perspective drawing in geometry, styles of architecture in art, neighborhood structure in geography and civics, etc. Secondly, developing an awareness of the built environment can enhance the student's appreciation of his own surroundings. In making a neighborhood or city more familiar and understandable it can become a place to explore and enjoy rather than to ignore or shun.

Furthermore, we are just beginning to realize the influence of the physical environment in shaping human behavior. It is important to understand this interaction in order to reshape our built environment in accordance with human needs and preferences. Thus the student must become aware of how he is affected by his built environment and how he can, in turn, affect it. This requires an understanding of the process involved in changing our built environment. The student must learn to evaluate existing conditions, consider alternatives, and make careful decisions. This process prepares the student to participate actively as an informed citizen in community change and improvement.

Finally, in order to study the total environment as a dynamic, interactive system, we must know more about the nature of its individual components. The intent of this reference book is to make known methods and materials for learning about one aspect of the total -- the built environment. Our ultimate aim is to encourage incorporation of this aspect into comprehensive, environmental education programs.

Selecting the Materials

In order to find materials on the built environment available to teachers, we conducted a systematic search of various agencies and organizations involved in environmental education: the Rockefeller Family Fund, Educational Facilities Laboratories, the U.S. Office of Environmental Education, projects funded under ESEA, Title III, ERIC Clearinghouses, the American Institute of Architects (national, state, and local chapters), the Association of Collegiate Schools of Architecture, state environmental commissions, educational organizations, teacher centers, and foundations, among others. In addition, we engaged in an informal process of following leads, suggestions, and contacts to search out those programs and materials which were not available through formal networks or which had received little or no publicity. This survey of materials and programs remains, nevertheless, incomplete because of our publication deadline. Materials are still being received, and we are in the process of designing a mechanism to update this sourcebook on a regular basis.

We have not conducted formal evaluations of any of these materials. The descriptions are based on materials received from curriculum writers, project directors, and others involved in their development and implementation. Some site visits were made in order to sample a variety of programs and curricula in process. We have, however, reviewed existing evaluation reports and noted their availability in the program descriptions. The materials included here have been selected on the basis of two criteria: 1) their availability to teachers across the country, and 2) their degree of concentration on the built environment.

Using this Sourcebook

We have found, in the course of this survey, that environmental education is best studied when applied to the local community and its environmental resources. Environmental education can also be dealt with in a variety of subject areas and from many different approaches. Thus, the materials included here will be most useful as guides, models, or supporting materials for programs tailored to specific localities, students' special interests, and the teacher's own orientation.

This catalogue contains materials for use in both elementary and secondary schools. It is divided into three major sections. The first contains information on reference material for the teacher in developing and conducting a program on the built environment -- teacher guides, resource and training centers, and background materials. The next section describes learning resources for use in and out of the classroom. This includes materials that pertain specifically to the built environment and other more comprehensive programs which give a thorough treatment of the built environment as an essential component of the total environment. The third section contains descriptions of some current projects on the built environment that have no curriculum materials available yet, but which merit attention for the variety of their approaches and may provide additional teaching and learning suggestions.

The general format is designed to enable the teacher and student to find materials suited to his/her needs and interests, be it age level or subject area. We hope that you will examine not only those materials that meet your specific needs, but also others which may provide you with additional ideas that can be adapted for your use.

Glossary

City

City appears throughout this sourcebook as the focus of several curricula and activities. In this context, city refers to any size settlement of people living in a predominantly built environment. Thus, the "city" materials are appropriate for schools in small towns as well as large metropolitan areas.

City/Urban Planning

The process of shaping the growth of urban centers to allow for controlled development of a complex environment. Considers social, political, and economic factors as well as aesthetics and cultural dimensions.

Cityscape/Townscape

The urban equivalent of a landscape - the shape of a city or one of its parts it presents to the eye, particularly from a distance. The silhouette of Manhattan's skyscrapers is a familiar example.

Ecosystem

A complex system formed by the interrelationships among living organisms and their environment.

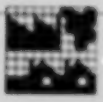
Environmental Design

A design approach that deals directly with the effects of building on the surrounding environment, for example, water supply and quality, plant and wildlife resources, noise pollution, and population density.

Gaming/Simulation

A creative technique used to discover and evaluate a given decision-making process. Participants take on roles of the people involved in a selected issue, for example, community planning or local zoning regulations, and play out the process to the final decision.

Land Use



The utilization of land for different purposes based on the needs and resources of the community or region, for example, industrial, recreational and residential needs. Zoning is the means of designating and regulating land use.

Mapping

The process of drawing a spatial representation of an area. Good educational method for teaching students components of a neighborhood or city and their interaction.

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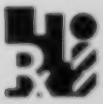
Neighborhood



- A local area whose residents are generally conscious of its existence as an entity and have informal face-to-face contacts and some social institutions they recognize as their own. Often the term "neighborhood" is used to mean nothing more than the geographic area within which residents conveniently share the common services and facilities in the vicinity of their dwellings.

Spatial Interaction

The ways in which built environments, spatial elements, and people interrelate, for example, the effect of furniture arrangement on group behavior and interaction.

Urban Ecology

The study of the interrelationships among living organisms in the city environment, including plants, humans, and animals.

- From The Language of Cities by Charles Abrams
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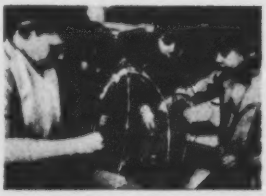
Teacher Resource Materials

This section contains information on teacher guides, resource and training centers and background materials. Teacher guides include general handbooks and film series on such topics as how to set up an environmental education program, develop curricula and teaching methods, and how to use the classroom and school site as an environmental laboratory. The resource and training centers are organized by region. They may conduct training workshops and offer consultation services; some have developed curriculum materials that are available to teachers; others have library facilities providing books and audio-visual materials for teacher training or classroom use. Background materials include books, periodicals, and bibliographies as sources of the built environment. These may also be useful for advanced high school students.

Teacher Guides

Environmental Education and Your School Site

For use at all levels



Presents ideas and suggestions for developing the school site for use in environmental education. Includes a rationale and background information, outline of development, case studies, and ways to use the site for environmental education. "How to" sections on building simple structures and research methods. A very thorough guide with complete reference section and instructive graphics. Developed through extensive research and pilot studies in school site development under a grant from the Illinois Institute for Environmental Quality. Primarily aimed at the elementary level but could be used with secondary students.

By Donn Paul Werling, 1973
Open Lands Project, 53 West Jackson Boulevard, Chicago, Illinois 60604, $3.00.

Environmental Methods

A series of eleven 20-minute television programs providing initial teacher training in environmental education. The first program is a general introduction to the field. Each of the next eight programs treats a particular subject area (mathematics, natural science, social studies, history, physical science, language arts, fine arts, vocational education) and gives teachers at all grade levels suggestions for implementing environmental education in the classroom. The last two programs are geared to lower and upper elementary teachers and provide suggestions for environmental awareness activities at these levels. Brief descriptions of each program and a brochure on the series are available.

The series was produced by the Shenandoah Regional Environmental Education Council, in cooperation with WVPT in Staunton, Virginia and first televised during the 1973-74 school year. For further information, contact Mr. Paul R. Lee II, Council Director, Environmental Education Council, Shenandoah Region, c/o Shenandoah National Park, Luray, Virginia 22835, or, Mr. Edwin L. Kaufman, Director of Instructional Programming, WVPT, Port Republic Road, Harrisonburg, Virginia 22801.

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Sourcebook for Environmental Education

A thorough sourcebook for those interested in developing a comprehensive program in environmental education from kindergarten through 12th grade. It deals substantively with all elements of environmental concern. Although much emphasis is on pollution and destruction of the natural environment, full attention is given to the urban and built environment with suggested units on "Main Street, U.S.A." and "The Urban World." Various program approaches are presented: detailed lesson plans for units, activities, environmental monitoring projects, and interdisciplinary case studies of several environments. The sourcebook includes objectives, ways to develop and use materials, check lists, questionnaire forms, environmental quality tests, and instructional plans. Evaluation techniques and goals are also discussed. The ideas and information presented are accessible and usable with special training. Developed by teachers and environmentalists.

By V. Eugene Vivian, 1973
C.V. Mosby Co., $7.00.

The Wisconsin Environmental Education Inservice Project

A teacher-training project begun in 1972 with the development of a resource guide for 2-3 hour in-service courses in environmental education. Geared to teachers of elementary through university levels in any subject area, the guide presents general guidelines for curriculum development, stressing the necessity of tailoring programs to the special needs and nature of each class. The guide deals with nine components of environmental education -- perceptual and conceptual awareness, phenomena of natural and man-made environments, aesthetic discrimination and valuing, humanism, creativity, organizational skills and decision-making -- thus presenting a very comprehensive approach. It emphasizes the experimental nature of environmental education and the importance of inquiry and action. Each section topic includes a rationale, goals and objectives, a detailed list of content areas with further breakdowns, plus instructional resources. A bibliography, film list, and an index of environmental organizations are also included in the guide. Numerous courses based on this resource guide have already been taught throughout Wisconsin for the last two years. A 1974 summer conference has produced a revised edition which will be available nationally on a limited basis. The project has been funded by the Department of Public Instruction, University of Wisconsin-Superior, and the National Science Foundation. The guide and courses have been developed by teachers and environmental specialists.

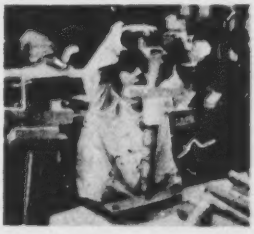
Department of Public Instruction,
126 Langdon Street, Madison, Wisconsin 53902

Doing Germantown- a Guide to Studying Urban Neighborhoods for Elementary School Pupils

A model for establishing a program investigating a neighborhood by small groups of elementary school children. Junior high school students and adults serve as aides in accompanying the children on weekly walks to local places of interest, e.g., a store, a park, where they take photographs and talk with people at work. The pictures are developed and used to motivate stories, puppet shows, and other activities in the classroom. The program was implemented in two Philadelphia area elementary schools in 1968-69.

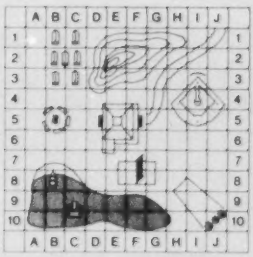
The School District of Philadelphia, Curriculum Publications and Textbook Section, 8th Floor, 219 North Broad Street, Philadelphia, Pennsylvania 19107, 45¢.

For use at the elementary levels



Understanding the School's Neighborhood

A teacher-training program, model curriculum guide providing techniques in social studies and language arts. The "social studies sampler" includes lesson and activity suggestions adaptable to primary and intermediate grades. Activities involve the child in exploring and analyzing his environment through mapping, planning, navigating, and observing. Activities are designed for individuals, teams, or a whole class; they vary in length. Two teacher workshop films, participating teacher's guide, workshop leaders' guides and social studies materials kits are also available. The program was developed by a public school language coordinator.



By Leo LaMontagne, 1968, A Starting Tomorrow Publication, In-Service Program for Elementary School Teachers, The Ealing Corporation, 2225 Massachusetts Avenue, Cambridge, Massachusetts 02140, $3.00.

The Local Community: A Handbook for Teachers

This is a guide for geography and social studies teachers in how to use the resources of their local community in teaching geography. Presents important geographical concepts that relate to the local community, methods for developing such programs, and 13 classroom activities each of which can constitute a mini-unit. Graphics are instructional and a bibliography is included. Developed by The High School Geography Project of the American Association of Geographers and supported by the National Science Foundation.

Macmillan Company 1968, $5.00.

For use at the secondary levels

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Messing About for Environmental Education

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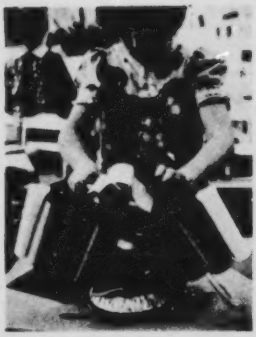


A booklet presenting a humanistic strategy for environmental education emphasizing the individual and considering the environment in terms of life-styles and aspirations. It gives specific direction for preparing two classroom kits, one for the "City" and one for "Nature." A sample "City" kit might contain, among other things, a parking ticket, a dirty auto air filter, city planning maps, a rat trap, a jar of city drinking water, and assorted restaurant menus. The structure of the activity is to provide a variety of stimuli and learning environments, then to go through the sequence of sensing, transforming, and acting. An in-depth discussion of the process of education from the humanistic approach to learning is given. Evaluation questionnaires on the kits are also included.

By Rodney F. Allen et al., Florida State University Environmental Education Project, 426 Hull Drive, Florida State University, Tallahassee, Florida 32306. Available in 1975 from ERIC, P.O. Drawer 0, Bethesda, Maryland 20014

The Teacher and the City

Discusses the city as a vital subject of learning and suggests planning techniques for urban education programs. Develops major themes: the City is -- 1) Organic in Nature, 2) the People, 3) a System within Systems, 4) a Work of Art, and 5) a Way of Life -- a State of Mind. Aims to develop the student's concern for his city and to promote participation and decision-making in environmental affairs. For use by secondary teachers of any subject, particularly applicable to social studies. Presents organization for teaching, several detailed lesson plans, and alternative learning situations. Includes an index of resources. Developed by teachers and educators in Canada in conjunction with a series of multidisciplinary seminars on the City. Supported by the Center for Continuing Education of the University of British Columbia and the university's School of Community and Regional Planning. Further support from the Central Mortgage and Housing Corporation.

Hilda Symonds (ed.), 1971, Methuen Publications, $7.00.

Man and Environment

A comprehensive course on man-environment relations developed for junior college students, teacher training and adult and community education programs. It has also been adapted for high school use. The series was developed by college representatives during two workshops in 1970 with a follow-up evaluation in 1971-72. It consists of 15 television documentaries produced by Miami-Dade's TV College staff and a textbook, Man and Environment, to accompany the films. Topics include ecological imperatives, change, energy, population, urbanization, and pollution. Units may be studied individually or as a package for a semester's course and cover a variety of subject areas. Focus is on content, information, and the development of values based on knowledge. The film series is intended to be implemented at a school system level in conjunction with local television broadcasting facilities. Interested teachers should first contact local school officials for implementation.

Dr. Franklin G. Bousma, Vice President of Instructional Services, Miami-Dade Junior College South, 1101 S.W. 104th Street, Miami, Florida 31156. Textbook is available from Prentice-Hall, $4.35.

Additional materials have been developed by agencies that have implemented the series locally. The New Jersey State Council for Environmental Education has compiled two guides for use in teacher and community in-service programs. Textbook A: Inservice Guide and Textbook B: Multidisciplinary Teacher's Guide assist in the introduction of the course in schools. They are available at $1.05 each plus shipping from the New Jersey Education Association, 180 West State Street, Trenton, New Jersey.

Two additional guides with an urban emphasis are available from Professor Roger A. Podewell, Olive-Harvey College, 10001 S. Woodlawn Avenue, Chicago, Illinois, 60628. There are 30 lessons in each guide, 15 relate to the film series and 15 relate to programs produced locally in Chicago. A limited supply is available, but quantity orders may be reprinted at cost, $1.00 per guide.

ERIC/CHESS

Resource Centers

This center provides two basic services: RIE (Research in Education), which acts as a clearinghouse for literature relating to social science/social studies, i.e., conference papers, speeches, bibliographies, research projects, guides, instructional films, learning resource centers, educational television, simulation and gaming, microfilms, etc., and CIJE (Current Index to Journals),

which monitors and processes journal articles. Includes works about content, teaching strategies, research, programs, social studies teachers and students, education as a social science, social studies and the community, interdisciplinary studies. RIE is $38.00 per year, CIJE is $44.00.

855 Broadway, Boulder, Colorado 80302.

ERIC/SMEAC

SMEAC is an acronym for Science, Mathematics, Environmental Education. This is a service which reviews journals with information relevant to environmental education for CIJE. These include, among others, Sierra Club Bulletin, Man-Environment Systems, Journal of the Air Pollution Control Association. Newsletters capsulized include Environmental Action Coalition's Cycle, Earth Beat, Environmental Awareness Reading List, etc.

400 Lincoln Tower, Ohio State University, Columbus, Ohio 43210.

The Alexander M. White National Science Center

The Alexander M. White National Science Center. An on-going museum exhibit in urban ecology for children in the New York City schools. Established in May, 1974, it now includes 14 permanent exhibits and several changing exhibits. Vacant lots, sidewalk ecology, parks, water, and city sounds are some of the topics. Materials are sent to teachers before their school class visits the Center. A specimen box, filmstrip, game sheets, maps, look-and-list charts, and other items are included in the packets for preparation and follow-up activities. The museum visit includes an informal teaching session with a member of the Science Center staff. There are plans for future teacher workshops and an evaluation procedure is being set up. The museum project is partially funded by the U.S. Office of Environmental Education.

Catherine Pessino, Director, Museum of Natural History, Central Park West, New York, New York 10024.

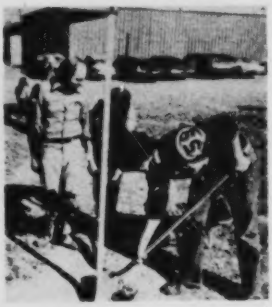
Environmental Action Coalition

EAC is actively involved in improving the urban environment through community and school projects in New York City. They sponsor an extensive recycling program and a community information program through their library resources (which are available to teachers) and public

broadcasting messages and programs. They began an inner-city project in 1972 aimed at aiding the residents of the Bronx in solving their environmental problems such as health, housing, and sanitation. They have also produced and tested educational materials for fourth to tenth grade students on energy, conservation city trees, and solid waste problems. They edit a newspaper on environmental events, Cycle, and a children's newsletter, Eco-News, EAC has a speakers' bureau and will send speakers to schools upon request. They also run teacher-training workshops in the schools, each on a different environmental topic with suggestions for lesson plans and teaching methods.

Joan Edwards, Education Programs Director, 235 East 49th Street, New York, New York 10017.

Project ECOS



A national training program that involves a close relationship between the school and community, stressing "political, economic, human factors as well as the physical and scientific." A project director and six staff members offer services in curriculum development, ecology, community planning, media and resource development; they help regional schools and community groups in the study of environmental problems and solutions; and they encourage schools to use their local resources and engage the total community in environmental improvement projects. The available instructional materials cover a wide range of subject areas and are geared for grades K-12. Manuals are compiled to describe models used so that school districts anywhere can implement similar programs. Activities guides, bibliographies, filmstrips, and film lists are available.
(See Comprehensive Programs, p.54)

ECOS (Environmental Education Community - Opportunity for Stewardship) Training Institute, BOCES Putnam-Northern Westchester, 845 Fox Meadow Road, Yorktown Heights, New York 10598.

TREE

A resource center for the study of the urban environment, TREE provides a variety of services: teacher and student (mainly 5th and 6th graders) workshops, consultants, materials (curriculum, books, films, kits), and organization of field trips to New York City sites with pre-trip preparation. The approach of TREE emphasizes awareness of the total urban environment and has provided several workshops in four basic areas: The Water System and Waterways of New York City, The Plant-Food-Waste Cycle, Man-Made Systems and Technology, and Neighborhood Study. They are now in the process of documenting these efforts and producing curriculum materials in the form of activity guides and general overviews in each area. These materials are being coordinated by the New York City Standard Public School curriculum for the 5th and 6th grades. However, the activities may be modified for different age groups in other cities as well. TREE, established in its present form in 1973, is funded by the National Park Service, the New York City Board of Education and the Museums Collaborative, Inc. The staff includes

specialists in several areas of environmental education. They are also assisted by many consultants throughout the city.

The Resource Program for Environmental Education, Federal Hall, National Memorial, 26 Wall Street, New York, New York 10005.

New Jersey State Council for Environmental Education

This center has purchased the copyright for the "Man and Environment" taped television series (see p.18) which has been made available for public broadcasting. The staff has written a series of 13 units entitled "Environment and the Quality of Life" which they have entered with the CBEU in Buffalo. The center also has a reference library that includes lists of audio-visual materials, games, periodicals, and books.

Montclair College, Upper Montclair, New Jersey 07043.

Boston Children's Museum

This museum has developed several exhibits and projects for children concerning their city experience and use of urban resources. The Centre Street Project, supported by the National Endowment for the Humanities, involved an extensive exhibit mock-up of the actual Centre Street in Jamaica Plain, followed by a community fair on the real Centre Street. Museum staff, community helpers and local merchants were all involved in making the local resources and history of the street accessible to the public. Funded by the Environmental Education Act of 1970 the Open City Project involved the transit system--the form of the system, how to use it, and the different environments reached by the system. They also developed, under a contract with the U.S. Office of Education, the MATCH box (Materials and Activities for Teachers and Children) series, 14 multi-media curriculum units, including one on "The City." They are now in the process of developing Citygames which will engage children and adults in learning about Boston through active exploration. The Citygames project is a joint venture of the Children's Museum, the Office of the Boston Bicentennial, and the Cambridge Seven Associates, architects, designers and planners.

Jim Zien, Director, Community Services Division, The Jamaica Way, Boston, Massachusetts 02130.

Massachusetts Audubon Society

This society has a library which is a resource center providing a broad range of materials regarding natural and built environments. The materials can be borrowed on a library loan card -- $4.00 a year for members of the Society, $5.00 for non-members. A two-month card is available for $1.00. The society's publications include, Sordid Solids, Oil and Water Don't Mix, Power and the Environment. Prices range from 5¢ to $5.00. They also have in-service workshops, one-shot site surveys of schools for development of outdoor classrooms, and a separate unit of the society operates an Environmental Intern Program in which an individual can work directly in a summer program dealing with some aspect of the natural or built environments.

Hathaway Environmental Education Institution, Lincoln, Massachusetts 01773.

Three-Dimensional Project

3-D emphasizes the use of the immediate environment as the content and vehicle of learning. It suggests that the community, its institutions and its history be subjects of study in a curriculum developed by teachers. Old Sturbridge Village is the main learning site, and local officials are contacted and encouraged to participate. Field studies are an essential part of the project, as are tapes, slides, and artifacts in the classroom. Project activities include a summer workshop and monthly workshops during the year for teachers. In these, teachers develop curriculum units, based on a curriculum development model, on a subject of their choice and make a field study based on Old Sturbridge Village. Among 85 units developed are several on the cultural environment: Architecture and Society, Land Use and Transportation, Space, and Modern Religious Architecture. The mimeographed units are all available at printing and mailing costs, as is the Annotated Bibliography of Teacher Developed Curriculum Models. Also available is 3-D's Guide for the Development of a Curriculum Model.
As an on-going project it continues to expand. An advisory group of community members was formed within a local school district to help establish communication within the community and to help identify and utilize its resources. Staff are currently working with 18 school districts in Massachusetts, and mini-workshops have been created to coordinate teachers in a given area.

The Teacher Center, Old Sturbridge Village, Alberta Sebolt, Director, P.O. Box 333 Sturbridge, Massachusetts 01566.

Klingle Urban Environmental Center

An outgrowth of the National Capital Parks' EXPAND Program, the Klingle Center advocates a sensory approach to the total environment, the development of skills to be used in approaching and dealing with many kinds of environments. They offer workshops on the urban environment to teachers, students, and community groups, dealing with such topics as Building a City Model, Mapping, Taking an Urban Walk, and Discovering Spaces and Changes, among others. Primarily serves the National Capital Parks area--Maryland, Virginia, and Washington, D.C.-- some instructional materials are available to teachers free upon request.

National Capital Parks, U.S. Department of the Interior, National Park Service, 1100 Ohio Drive, S.W., Washington D.C. 20242.

Attic and Cellar Studios

A design collaborative dealing with the man-made, natural, and social environments. Services provided include planning, graphics design, photography, media design and production, environmental design and community organization. The Thomases conduct multi-media workshops for students, teachers and community groups on environment and design. They have developed pilot programs that demonstrate the newly created materials and train the people who will use them. They work through design and planning to improve communication and man-community interaction.

Ronald and Marley Thomas, Directors, 1346 Connecticut Ave, N.W., Dupont Circle Building, 913, Washington, D.C. 20036.

Project KARE

This project has established an Environmental Education Resource Center (EERC) that provides consultant services to more than forty schools in the Southeastern Pennsylvania region. The services offered, free upon request, include site analysis, curriculum evaluation, needs assessment, curriculum and materials design, facilities development, in-service training and community education. KARE also allocates grants for Local Action Programs (LAPs) to regional schools. Community for Constructive Action, Operation Clean Sweep, Environmental Comparison of Localities and Planning for Our Future are among the many projects funded.

Knowledgeable Action to Restore our Environment, Alan Sexton, Director, Colony Office Building, Route 73 and Butler Pike, Blue Bell, Pennsylvania 19422.

Environmental Education Center

"The mission of the Environmental Education Center is to foster within sixth graders in participating school populations of western North Carolina knowledge about and positive attitudes toward the environment and man's role in the environment." A regional center actively involved in teacher-training and curriculum development in environmental education. Also involved in community education, sponsors a University course in environmental education, an in-service, renewal credit course for teachers, provides regional consultant services and services as a regional community coordinating agency. Has an extensive reference library of background literature, student books, and audio-visual materials.
Materials specific to the study of the built environment include An Introduction to the Urban Environment (curriculum guide), City Planning (a social studies lesson), Encounters in My Environment (booklet of lessons), Environmental Education: An In-Service Workshop, Land Use (activities guide), Environmental Education Bibliography, Environmental Education in Children's Literature (book reviews and notes), Environmental Education Media (bibliography), a newsletter, and much more.

Dr. Larry Liggett, Director, 13 Veterans Drive, Oteen, North Carolina 28805.

Learning Environments for Children

This is a study for planning day care or preschool centers to provide a stimulating environment for children. Its simple outlines and graphics suggest ways of establishing the necessary facilities and amenities of a working environment. The participation of members of the community who will use the centers is stressed at the planning level; they work with the experts to study specific community problems and needs. (The background to the initial development of this concept is described in "An Alternative Strategy for Planning an Alternative School," Henry Sanoff and George Barbour.) A simple game plan is included to enable planners and parents to manipulate, arrange and rearrange the facilities they wish to incorporate. Four centers are cited as examples of the applied theory.

Two other games which provide insight into the planning process are also available. ROLE (Relating Objects for Learning to Education) is for planning educational objectives. "Learning Methods," "Objectives," and "Settings" are the cards and the players are the building committee members (doctor, minister, builder), parents, teachers, and school administrators. With

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careful thought and discussion, the differing ideas of the people involved can meet a unified goal. POP (Planning Outdoor Play) is to be played by teachers, teachers' assistants, children, etc. The four sets of cards include "Objectives," "Activities," "Zones," "Settings." Through negotiation the group can facilitate the design of children's outdoor play and the selection of appropriate equipment.

Henry Sanoff, Joan Sanoff, Anderson Hensley, Learning Environments, P.O. Box 6422, Raleigh, N.C. 27608.

Hillsborough County Public Schools

This project is an example of a comprehensive program within the county school system - a well-coordinated, system-wide, time-spanning effort with the local community, using existing materials. As a result of their efforts they have produced lists of films and materials, lists of suggested field trips. Their newsletter gives information on activities, materials, media, events dealing with environmental education. Four printed guides (K-12) with activities, materials and resources, and organization and production of suitcase-type programed activity kits are the major materials produced. It also serves as a model to be used by any county public school system in coordination with the local community. Stresses interdisciplinary "All education is Environmental Education," incorporating natural and built environments.

Environmental Education/Instructional Services Center, 707 East Columbus Drive, Tampa, Florida 33602.

Minnesota Environmental Sciences Foundation Inc

From a grass-roots effort this program has expanded into an extensive multi-level program which covers many facets relating to the environment: environmental education program planning, classes and workshops for teachers and other educators, long-range educational program planning, school site development, resources and programing in environmental and related careers. Planning and consulting efforts are geared to teachers and school systems as well as to environmental commissioners, resource managers, and community groups. The materials available for teachers are meant to be used as guides to "promote problem-solving and encourage a multidisciplinary approach to problems." They have developed and evaluated a broad curriculum program which consists of activity units, investigation booklets for students, simulation activities for all age groups, instructional manuals for teachers, guides for land-use planning and programs, manuals for teacher in-service education and a multi-media package for the learner and teacher. Series titles include Environmental Discovery Units, Environmental Issues, Give Earth a Chance,

Planning an Awareness Environment, and Community Environmental Studies Materials.

5400 Glenwood Avenue, Minneapolis, Minnesota 55422.

Community Design Center

Volunteer architects, landscape architects, and graphics artists offer their services free to low-and no-budget groups and individuals. It has also provided educational services, such as a "Basic Architecture" course for fourth graders, a community education course in design and structures, a workshop in children's environmental design, and K-12 seminars on design awareness, urban architecture, architectural and environmental problems. Funded by foundations, professional organizations, and corporations.

CDC, Elizabeth Robbins, Director, 118 East 26th Street, Minneapolis, Minnesota 55404.

Open Lands Project

This serves as a resource center and referral agency for anyone concerned with environmental problems. It also assists public schools and other educational institutions in creating programs on environmental problems, works with teachers toward increasing student awareness of environmental opportunities, and endeavors to promote use of existing public open space as environmental study area.

53 West Jackson Boulevard, Chicago, Illinois 60604.

Institute for Environmental Education

A resource center for teachers, administrators, and students. Provides workshops, summer courses, curriculum guides, teacher and student internships, and consultation. Projects and publications concentrate on specific environmental problems, e.g., water quality, traffic flow. Offers the Environmental Education Guide Series, a continuing plan to provide environmental education materials, including planning and teaching manuals, curriculum guides, case histories, reprints, and audio-visual aids.

Joseph Chadburne, Director, 8911 Euclid Avenue, Cleveland, Ohio 44106.

Environmental Education Center

This serves the tri-county area of Portland as a resource and media center and offers consulting services. They provide information

concerning agencies, organizations, people, and resources dealing with urban problems. They also have suggestions for field trips, a collection of games and simulations, curriculum kits, bulletins and newsletters. Very action-oriented, very people oriented. Sponsored by Portland State University and Portland Public Schools.

Dr. Donald W. Stotler, Director, Room 373 Lincoln Hall, Portland State University, Portland, Oregon 97297.

Open Space Inc.

Sponsors an Environmental Education program and the Environmental Teacher Center, an in-service teacher education program. Helps with curriculum development through workshops on such topics as comparative urban and natural environments and fantasy cities. Provides guidance in integrating environmental goals into the total school curriculum as well as short activity plans for classroom and community use. Encourages a comprehensive, interdisciplinary curriculum plan, stressing experiential, active learning and progressive, open-education methods. Staffed by public school teachers and private professionals from allied fields. Coordinated with the Los Angeles Unified School District and funded under ESEA, Title III.

Edward Gans, Director, 4940 Sepulveda Boulevard, Culver City, California 90291.

Resource Center for Man-Made Environmental Education

At this center, teachers are exposed to problems and opportunities for improvement in the man-made environment. They are given ideas for study in the classroom and can sort through a display of commercially available materials for classroom use. A workshop is offered for university credit. A brief bibliography is available free of charge.

College of Engineering and Architecture, North Dakota State University, Fargo, North Dakota 58103.

Teacher Background Materials

American Architecture and Urbanism

- Vincent Scully, Praeger 1969, $18.50; $5.95 paperbound. A history of architecture and city planning in America written by a distinguished architectural historian. Interesting reading and a useful reference book.

American Houses: Colonial, Classic, and Contemporary

Edwin Hoag, Lippincott, 1964, $5.95, hardbound. Architectural history of American houses. Many black and white photographs.

Architecture as Space: How to Look at Architecture

- Bruno Zevi, Horizon, 1957, $10.00. The author suggests that the reality of a building is not its roof or its walls, but rather, the space it encloses. Illustrated.

Architecture: City Sense

- Theo Crosby, VanNostrand Reinhold, 1965, $2.95, paperback. The author considers the city man's greatest invention; he attempts to develop a coherent approach to city living through an understanding of its elements and functions.

The Death and Life of Great American Cities

- Jane Jacobs, Random House, $5.95. Suggests what gives life and spirit to a city and what makes a city work. The author concludes that the very elements that make a city function from a humanist's point of view are the ones that city planners frequently eliminate when rebuilding cities. She considers some of the dangers of change as perceived through conventional redevelopment practices.

Deciding How to Live in the City: The Ethics of Urban Design and Lifestyles

Developed by the Ethics of Environmental Concern Project, Tallahassee, Fl., Plover Books, 1974, $3.50
A casebook for living in the city.

Design of Cities

●Edmund Bacon, Viking, 1967, 296 pp., $15.00.
The Philadelphia city planner states his thesis that great urban design ideas, once established, have a force of their own that carries them from one generation to the next. Brief text accompanies rich illustrations of urban form achievements of the past and present.

Encyclopedia of Modern Architecture

□Wolfgang Pehnt, Harry N. Abrams, Inc., $15.00
Reference book with 400 illustrations and brief texts concerning architects, buildings, and related subjects. Useful for finding specific information concerning architecture.

Environmental Man

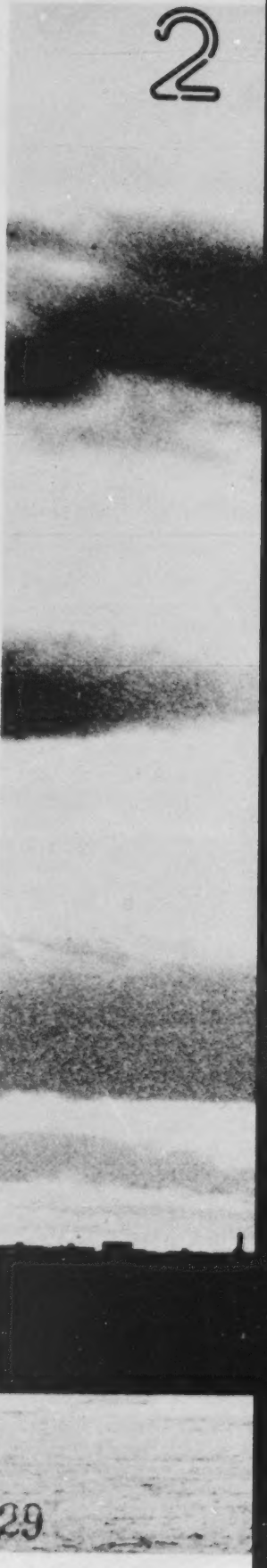
□William Kuhns, Harper & Row, $4.95.
A short book that offers an analysis of the interaction between man and particular environments.

Experiencing Architecture

Steen E. Rasmussen, MIT Press, $2.95
Deals with awareness of the built environment through various human senses. Very readable text accompanied by photographs of buildings and streets throughout the world.

●Annotations from Environmental Education; by the Committee on Public Education of the AIA, 1970.

□Annotations from Our Man-Made Environment, Book Seven, MIT Press, 1970. (see p.48.)



Finding Community

A Guide to Research and Action, prepared by Ron Jones with Julia Cheever and Jerry Ficklin, 1971. Available from Zephyros, c/o Ron Jones, 1201 Stanyan Street, San Francisco, California 94117, $3.45.
Ways to begin research and action in the community. Of particular relevance is the section on housing that contains background studies and suggestions for action, e.g., a housing survey determination of the effects of local planning on housing. Social-action oriented.

The Image of the City

•Kevin Lynch, MIT Press, $2.95.
The author delves into the value of "imageability" as a potential guide for the building and rebuilding of cities. He identifies the elements of the environment and then discusses how we are affected by our visual perceptions of them.

Man-Made America

Christopher Tunnard and Boris Pushkarev, Yale University Press, 1963, $20.00.
Deals with the various problems of urban sprawl and transportation. Topics include urban landscape, industry, and open spaces. Well illustrated.

The New Town Idea

Harper & Row, Open University $3.75.
Deals with the history of the new town idea and evaluates the new town experience mainly from the British experience.

Question of Priorities: Man's Future in the Man-Made Environment

Edward Higbee, Morrow, 1971, $2.50.

The Spread of Cities

Harper & Row, Open University, $5.95.
Strategic and comparative view of the pattern of growth of major cities.

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Towns and Buildings

•Steen E. Rasmussen, Harvard University Press, 1951, 203 pp., $4.25.
The visual principles of city organization. Ink sketches by the author amplify the cultural history of cities.

Urban Landscape Design

•Garrett Eckbo, McGraw-Hill, 1964, 248 pp., $17.00.
Through case studies and abundant illustrations, this book defines landscape quality, the processes that produce it and those that can be used to improve it. A view of landscape as the result of interaction between man and "non-human" nature.

The Urban Prospect

Lewis Mumford, Harcourt, Brace & World, 1968, $2.45.
Mumford's forecast and critique of the future of the city. Stresses the need for complete change in attitudes and behavior for positive change to take place.

Urban Structure: The Social and Spatial Character of Cities

Ralph Thomlinson, Random House, 1969, $7.95.
Interdisciplinary study concerning space, the nature and rise of cities, urban development and growth, and the structure of the city. Discusses urban alternatives and possible futures. Contains a complete bibliography.

Alternative Learning Environments

Emerging Trends in Environmental Design and Education, Gary Coates (ed.), 1974, Dowden, Hutchinson & Ross, $22.00.
Articles by architects, landscape architects, urban planners, teachers and administrators, psychologists, and social theorists on such topics as environmental education, advocacy planning and community participation, alternative educational institutions, and new developments in design and research.

Structures

Education Development Center, 15 Mifflin Place, Cambridge, Massachusetts 02138 has a number of books that are useful in classroom projects: Structures; Materials: A Useful List of Classroom Items That Can be Scrounged or Purchased; Building With Cardboard; Building With Tires; Building With Tubes; and Cardboard Carpentry.

Blueprint for Survival

Houghton Mifflin, 1970, 189 pp., $4.95.
On environmental education, including strategies for change. Published in England by the editors of Ecologist magazine.

Environment and the Schools

National School Public Relations Association, 1201-16th Street, N.W., Washington, D.C. 20036, 1971, $4.00, Stock #411-12782.
An overview of environmental education at state, district, and national levels, with descriptions of representative programs.

The Environmental Classroom

Donald E. Hawkins and Dennis A. Vinton, Prentice Hall, 1973, $8.95.
Advocates the use of the total resources of the environment to develop awareness, understanding, and action to improve man's environment.

Environmental Education: A Sourcebook

Cornelius J. Troost and Harold Altman (eds.), Wiley, 1972, 575 pp., $8.95, paperback.
A collection of readings oriented mainly toward the natural environment, but containing sections on the general nature of environmental education, planning a school program, and urban activities.

Books on education and environmental education

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Environmental Education for the Seventies

Ronald L. Giese, G.R. Parker, and B.F. Binhammer (eds.), 1973, $3.50 from Cooperative Extension Service, Mailing Room, AGAD Building, Purdue University, Lafayette, Indiana 47907.
Contains general readings on philosophy, concepts, program development, and examples of methods and lesson plans. Extensive bibliography.

Environmental Education: Strategies Toward a More Livable Future

James A. Swan and William B. Stapp (eds.) 1974, Sage Publishing Co.
A book of readings including an excellent article by William Stapp on setting up a total environmental education program.

Environmental Improvement

United States Jaycees, Local Chapter Service Center, P.O. Box 7, Tulsa, Oklahoma 74102, Free.
Project kits in a folder. Intended for community use, but adaptable for secondary school use. Each contains information on environmental topics, films, and guides. Relevant topics include land-use planning, city beautification, and mass transit.

Environments: Readings for Teachers

Addison-Wesley, 1972, $3.50.
Contains six sections on the relationship between environment and education, human ecology, man and radiation, environment and social action, pollution, and the environmental crisis.

Farallones Scrapbook

Farallones Designs, 1971, $4.00, Star Route, Point Reyes Station, California 94956.
On building domes and playgrounds, making things from scraps, where to get free materials, and ways to change classrooms into more open spaces.

Making the City Observable-Design Quarterly 80

Richard S. Wurman, 1974 revised edition, MIT Press.
A compendium of books, maps, and other resources for learning about the city. Suitable for adults and older high school students.
Contact GEE! for price and ordering information.

School Zone: Learning Environments for Children

Anne Taylor and George Vlastos, Van Nostrand Reinhold, 1975.
Explores pragmatic ideas for designing and building indoor and outdoor learning environments that use the curriculum as the design determinant for the architectural systems that actually teach children concepts from science, math, etc.

What Makes Education Environmental?

Don Albrecht and Noel McInnis (eds.), 1974.
$5.00 from Environmental Educations, Inc., 1621 Connecticut Avenue, N.W., Washington, D.C. 20009.
A book of readings on environmental education with sections on philosophy, instruction, environmental communication and perception, environmental education advocacy, needs and future promise.

Bulletin of Environmental Education (BEE)

Town & Country Planning Association, 17 Carlton House Terrace, London SW1Y 5AS, England.
British environmental education newsletter emphasizing urban and general ecological issues.

Design and Environment

Design and Environment
5400 Goldsboro Road, Washington, D.C. 20034.

Econews

University of Wisconsin-Green Bay, College of Human Biology, Green Bay, Wisconsin 54302. For high school faculty and students interested in environmental education.

Environment

Scientists' Institute for Public Information, 30 East 68th Street, New York, New York 10021. Published monthly; one-year subscription $10.00; student subscription, $7.50.
A magazine containing nontechnical articles on environmental topics

Environment and Behavior

Sage Publications,
275 South Beverly Drive, Beverly Hills, California 90212.

Environment and Planning

Pion, Ltd., 207 Brondesbury Park, London, N.W. 2 5JN England

The Environment Monthly

Environment League, Inc., 420 Lexington Avenue, New York, New York 10017. Published monthly; subscription, $35.00.
For professionals and concerned non-professionals in environmental design.

Environment News

Public Affairs Office, U.S. Environmental Protection Agency, Room 2203, J.P. Kennedy Federal Building, Boston, Massachusetts 02203. Free.

Environmental Action Bulletin

Rodale Press, 33 East Minor Street, Emmaus, Pennsylvania 18049.
Published weekly; six-month subscription, $5.00; one-year subscription, $10.00.
General articles on the environment and environmental education.

Environmental Activities News Bulletin

Charles E. Merrill, Publisher, 1300 Alum Creek Drive, Columbus, Ohio 43216.
Occasional newsletter, free subscription.
Contains ideas, techniques, and information on environmental education.

Environmental Alert

Lee County Environmental Education Center, 2266 Second Street, Fort Myers, Florida 33901.
A newsletter on environmental education, containing brief items and information on local activities.

Environmental Education Report

Environmental Educations, Inc., 1621 Connecticut Avenue N.W. Washington, D.C. 20009. Monthly; one-year subscription, $25.00.
Includes items on local, state, national, and international programs; federal and state legislation, calendar of conferences and workshops and book reviews.

Environmental Quality

Environmental Awareness Associates, 6464 Canoga Avenue, Woodland Hills, California 91364.
Monthly; $12.00 per year.
A magazine containing articles, interviews, cartoons, departments on environmental and consumer subjects.

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Essentiasheet

ESSENTIA, The Evergreen State College, Olympia, Washington 98505.
On creating humanistic educational environments.

Journal of the AIA

1735 New York Ave., Washington, D.C. 20006

Journal of Environmental Education

Dembar Educational Research Services, Inc., P.O. Box 1605, Madison, Wisconsin 53701. Published quarterly; one-year subscription, $10.00; student subscription, $7.00. "Devoted to research and development in ecological communications." Contains articles on research, book reviews, and descriptions of various programs in environmental education.

Journal of Geography

National Council for Geographic Education, P.O. Box 8102, University of Miami, Coral Gables, Florida 33124.

Newsletter of Environmental Education

Vancouver Environmental Education Project (VEEP), Faculty of Education, University of British Columbia, Vancouver 8, British Columbia, Canada. Published three times a year. On Canadian environmental education.

North Carolina Environmental Education Newsletter

North Carolina Environmental Education Program, P.O. Box 5125, Raleigh, North Carolina 27607. News of state environmental education projects.

Review of Research in Visual and Environmental Education

University of Illinois, 120 Fine Arts Building, Urbana, Illinois 61801. Published twice yearly, free. A journal on social behavior as it relates to visual arts and the environmental design and planning disciplines.

SMEAC Newsletter

ERIC Information Analysis Center for Science, Mathematics, and Environmental Education, 400 Lincoln Tower, The Ohio State University, Columbus, Ohio 43210.
On conferences, publications, programs, grants, and the ERIC/SMEAC system.

Street

Pratt Institute Center for Community and Environmental Development, 240 Hall Street, Brooklyn, New York 11205
A newsletter containing articles on environment, particularly the urban environment, and serving the Brooklyn area. Of general interest, however, for it contains information on national and international developments in urban environmental matters.

Exchange Bibliographies

Council of Planning Librarians, P.O. Box 229, Monticello, Illinois 61856.
A national organization of librarians, professional planners, public and private planning organizations, and others concerned with the dissemination of information about city and regional planning. Publishes Exchange Bibliographies, each containing annotated references on a particular topic in the planning discipline. Write for their List of Bibliographies in Print.

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The Directory of Free and Inexpensive Environmental Education Publications

Jerry L. Underfer, 1974. Environmental Education Materials Evaluation Project, University of Toledo, Toledo, Ohio 43606. $2.00.

Ecosources

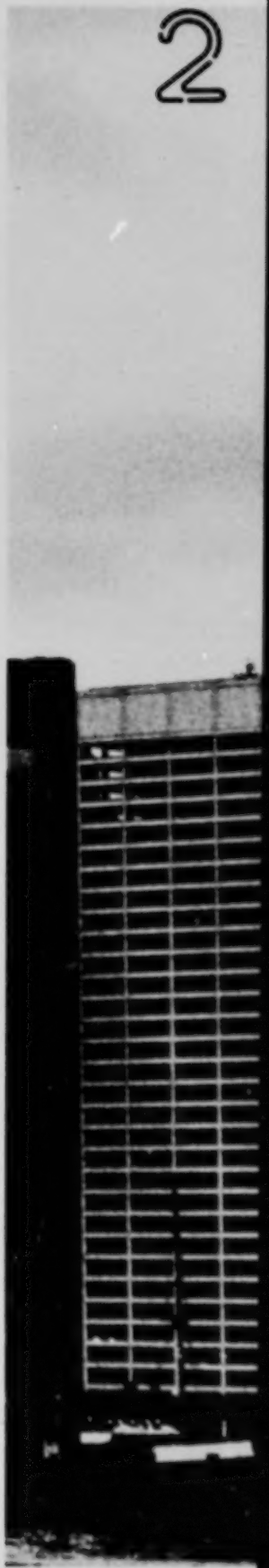
Mrs. Janet Woerner, Freeland High School, 710 Powley Drive, Freeland, Michigan 48623.
A free, monthly list of sources of information on the environment and environmental education. Send a self-addressed, stamped envelope.

Environment and the Community, An Annotated Bibliography

U.S. Department of Housing and Urban Development, Washington, D.C. 20410, 1971, 65¢.
An annotated bibliography directed to city planners, architects, builders, and interested laymen. Contains books, articles, periodicals, films, and organizations dealing with the environment of American cities and communities. Topics include architecture and urban design, community facilities, environmental planning, housing, land use, recreation, technology and transportation as well as general background information.

Environmental Education—Related Research, 1969-72, An Annotated Bibliography

Alan M. Voelker, Frei A. Heal and Robert E. Horvat, Center for Environmental Communications and Education Studies, 433 North Murray Street, University of Wisconsin, Madison, Wisconsin 53706.
Abstracts of research studies concerning a variety of topics in environmental education.



Massachusetts Audubon Society

Massachusetts Audubon Society, Hathaway Environmental Education Institute, Lincoln, Massachusetts 01773.
Publishes seven bibliographies for children from primary grades through intermediate, containing titles of books, curriculum materials, film loops, films, filmstrips, graphics, magazines and newsletters.
Prices range from 60¢ to $1.00.

Science for Society, A Bibliography

Prepared by Felicia E. West,(1973, 4th ed.) for the Commission on Science Education, American Association for the Advancement of Science, 1515 Massachusetts Avenue, N.W., Washington, D.C. 20005.
Annotated references on many topics dealing with the relationship between science and society, including Resources and the Environment, Technology, and Environmental Education, among others.

Urban Issues in Environmental Education: A Selected Bibliography

Michael G. Thornley, 1972 Sheffield Centre for Environmental Research, 299 Western Bank, Sheffield, England S10 2UD.
Lists books, curriculum, projects, and articles on environmental education in both the United States and England.

What is a City? A Multi-Media Guide on Urban Living

Rose Moorachian (ed), 1969 Boston Public Library, P.O. Box 286, Copley Square, Boston, Massachusetts 02117. $2.00.
An annotated bibliography of books, films, tapes, games, puzzles, block sets and more dealing with all aspects of the city. All materials are for children (pre K through grade 12) and each entry notes appropriate age level. Bibliography is organized by topic, with each chapter being one answer to the question, "What Is a City?"

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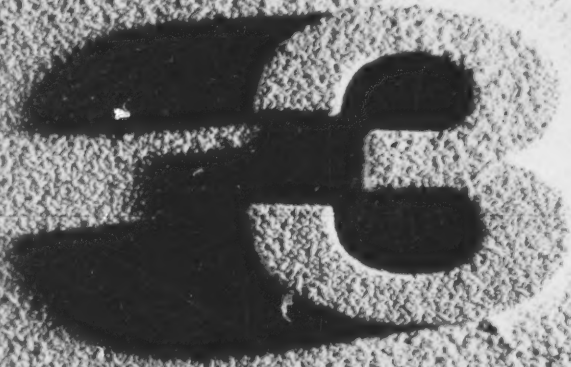
learning resources: the built environment



The learning resources in this section include specific curriculum materials and a bibliography of classroom aids that deal with the built environment. All materials are listed according to age level. Three types of curriculum materials are included. The Units and Mini-Courses provide a sequential development on a topic area over a period of a few weeks or months. The Activity Guides offer suggestions for specific nonsequential activities and projects that might be incorporated into the normal curriculum involving a few hours or days to accomplish. A further section on Comprehensive Programs describes materials that incorporate the study of the built environment into a program dealing with the total environment, both natural and man-made. An annotated bibliography of books for students is included as well as a listing of film series, props, and games and simulations.

Units and Mini-Courses

Community Environmental Study Materials

1 Community Environmental Study Materials for Special Education was developed by a team of teachers who worked with special education students and then reported their activities. These are presented on heavy colored paper along with objectives, comments and follow-up activities. They all involve field trips around the community, e.g., "Tour of a Community Bank and a Large Downtown Bank," "A Study of Pollution in a City Pond," "Field Trip to a Packaging Factory," etc. The approach is very much what-it-means-to-me aspects of local communities and ecosystems and co-participation in life of the community. Not restricted to special education, could be used with many kinds of children. About $1.00 for 2 sets of 14 cards.

2 Breaking into Your Community is a series of pamphlets which attempt to make students aware of their local environment. Each gives an introduction, synopsis, and objectives and lists discussion topics and activities (group and individual). Topics include Community Environmental Changes; Planning Your Ideal Neighborhood; Energy: The Marriage of Heaven and Hell; and Learning about your Local Action Group. About $1.00 for 2 sets of 10 pamphlets.

Minnesota Environmental Sciences Foundation, 5400 Glenwood Avenue, Minneapolis, Minnesota 55422.

5 5 years to 15 years

If You Live in a City, Where Do You Live

1

A five-week unit including five televised 30-minute films and accompanying activities cards. The central theme of interaction between people and their urban environment is developed along several dimensions. The films portray children, the same age as the students, interacting with different city environments. Colorful, illustrated activities cards enlarge on the related film ideas and prompt students to explore aspects of their own neighborhoods, street furniture, indoor/outdoor spaces, traffic patterns, buildings and parks -- "observing, describing, evaluating, proposing, and predicting." Could be used in a variety of subject areas (social studies, English, art, history) or as an interdisciplinary program. Includes a Teacher's Guide to Urban Conservation. The series is available on a leasing basis to broadcast agencies; thus, a teacher or school system should work through a university TV station, public broadcasting station, or (as in NYC) a school system TV setup. Charges are based on the K-12 school population. Designed in 1966-70 by educators and film specialists at WGBH Educational Foundation in Boston, It is now distributed by the National Instructional

Television Center. A full-scale evaluation report, Children and the Urban Environment: A Learning Experience (Praeger, 1972; $13.50), is available based on the program's use with 5,000 students in Rochester, New York, Louisville, Kentucky, Saginaw, Michigan, Sacramento, California, and Honolulu, Hawaii.

National Instructional TV Library, Box A Bloomington, Indiana 47401.

Urban Action: Planning for Change

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Intended as a full-year course, but may be stretched or units excerpted. Students participate in the process of city planning, actively researching their local community (its political, economic, and cultural history), discovering neighborhood problems, designing and carrying out plans for change. Field surveys, mapping, and interviews are conducted. Other communities, ideal and practical, are considered, presenting possible alternatives. Emphasis is on action and change in the man-made environment. The curriculum includes a teacher's guide and student workbooks, Community Planning Handbook, with information, exercises, maps, and graphics. Supplemental filmstrips, records, songsheets, and course-planning guides are also available. Developed by architectural designers and educators in 1966-70.

C. Richard Hatch Associates, 1970, available from Ginn and Co., $7.15 per workbook or teacher's guide. Approximately $200.00 for total package.

Cities and City Life

18

A social studies unit focusing on social and geographic trends as they affect the form of city environments. Straightforward approach, content and information oriented, contains some graphics: city photographs, maps, and population tables. Covers residential patterns, suburbanization, racial patterning and relocation. New York, Chicago, and Boston are cited as examples, but concepts could be applied to other cities. Useful as a unit studied over several weeks in social studies, government, or urban geography. Designed and revised for national trials by teachers and a sociologist in Austin, Texas, through Sociological Resources for the Social Studies, a project of the American Sociological Association, supported by the National Science Foundation.

Allyn and Bacon, 1970, $6.78 for a set of 10 episodes and a teacher's guide.

43

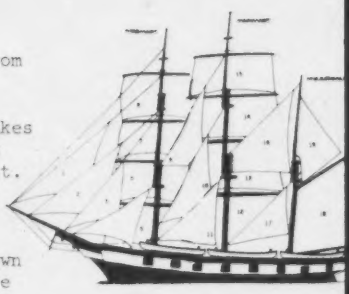
Green Places in City Spaces- Caring for City Street Trees

10 12

A curriculum unit on city trees. The teacher's guide contains descriptions of 13 activities involving tree identification, field trips, experiments, tending trees, "tree mapping," and ultimately the planting of a tree. Concepts developed are the aesthetic value of trees, suitability of certain trees to the city, benefits of trees to the environment, vulnerability of street trees, and ways of caring for trees. The unit has been tested in New York City schools. For supplementary materials available from the Environmental Action Coalition, (see Centers, p. 19.) For members of the Coalition, the guide and 30 copies of two issues of Eco-News cost $2.50. For non-members it costs $5.00.

Environmental Action Coalition, 1974, 235 East 49th Street, New York, New York 10017.

People and Technology



A curriculum for grades 5-7 examining the relationship between people and technology from historical and social science perspectives, then employing what they learn to their community. The first unit, "Using Tools," takes whaling to demonstrate the interrelationships among technology, society, and the environment. The second, "Acquiring Energy," has children study an example of man's large-scale intervention in the natural environment, and then examine the energy technology in their own community. Three main learning techniques are employed: manipulative activity, case study, and community exploration. Designed for social studies, but can be adapted for science, mathematics, language arts, manual training, or interdisciplinary studies. Materials employ several media -- films, tool kits, student booklets, teacher guides, newsletters.

Introductory workshops for teachers have been conducted in several areas of the U.S. by the Education Development Center staff. Teachers receive further support through newsletters and hot-line. Program has latitude for teachers to develop their own materials and techniques.

Developed in 1972-73 by two educators from the Education Development Center with consultants in urban studies and social science from Princeton, Harvard, and M.I.T. Funded by the National Endowment for the Humanities. Implemented in over 250 classrooms in the U.S. and Canada. Impressionistic evaluations by teachers are very favorable. Materials and further information available from Education Development Center. Prices vary according to materials ordered.

Education Development Center
15 Mifflin Place, Cambridge,
Massachusetts 02138

Changing Cities: Social Studies

3

124

A "quinmester" program introducing urban life. Presents the history of cities, assesses the present urban situation, and examines plans for future cities. Objective is an awareness of urban growth and development. The final unit is the designing of a future city. Lessons are organized each with a focus, objectives, and learning activities. Approach is more informational than experiential. Includes many discussion topics and an extensive bibliography.

Available for $3.29 prepaid, order number ED 073 961 from ERIC, P.O. Drawer O, Bethesda, Maryland, 20014.

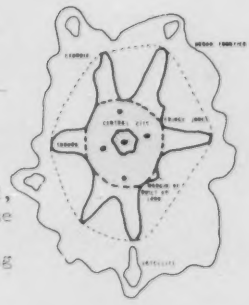
Cities in Crisis: Social Studies

148

A "quinmester" curriculum dealing with urban problems such as ecology, city planning, energy, transportation, and crowding. The course is organized around the following topics: 1) history and development of American cities, 2) environmental, sociological, economic and political problems of cities and plans for their solutions, 3) housing legislation, 4) prejudice and discrimination, 5) local politics, 6) zoning, and 7) comprehensive city planning. Suggests activities and topics for research, reports, and class discussion. Contains extensive bibliography.

Available for $3.29 prepaid, order number 061 126, fror ERIC, P.O. Drawer O, Bethesda, Maryland 20014.

Geography in an Urban Age



A multi-media geography course that includes teacher's kit, student's kit, additional student resources books, workbooks, additional map and data tablets, "games" and "quizzes." Encourages students to use a variety of media to learn about the environment: topographic maps, aerial survey photographs, recorded interviews, transparencies, plastic model kits, etc. The theory behind city location and growth is studied, followed by application to a specific city and the creation of a hypothetical city. Six units of study include: Geography of Cities, Manufacturing and Agriculture, Cultural Geography, Political Processes, Habitat and Resources, and Japan. Optional activities are included. Prices vary according to kit and the quantity ordered.

Association of American Geographers, Macmillan Co.

The Man Made World

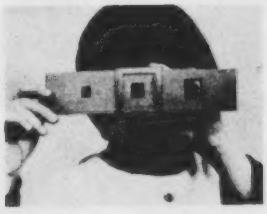
18

A course in technology for those with nontechnical background and/or inclination. Provides a series of lessons and activities which are varied and flexible, given as eight "mini-courses." These are paced to allow nontechnically oriented students to grasp new concepts slowly. Examines computers, workings of a car, electrical circuits, bridge building, pollution, man as a consumer, and many more relevant subjects. Includes a teacher's manual ($9.28), transparencies, worksheets, tests, etc., films may also be ordered. Man and His Technology ($8.50) is a paperback rewrite of The Man Made World ($10.80 for 3 volumes) with emphasis on discussion questions rather than math problems and hardware-type labs. Also available is Man and His Technology: Problems and Issues ($3.95), which examines some of the major problems facing man in the last half of the twentieth century.

Engineering Concepts Curriculum Project, 1971, Polytechnic Institute of Brooklyn. Available from McGraw-Hill.

Aesthetic Education Program

12



A multi-disciplinary program focussing on the individual child's senses and emotions. The goal is to help the child "perceive and analyze environmental, creative, and artistic processes and to make competent, sensitive, and critical judgements about them." For primary and middle school grades.

Forty multi-media units are planned, and 10 are completed. They contain imaginative exercises, sensible suggestions, and effective, bold graphics. The teacher's guide for each lesson includes detailed presentation suggestions, objectives and evaluation techniques. Student packages contain such subjects as Examining Point of View, a photography unit and three units on perception of color, size, texture and volume of things in the environment. These materials are available from the Viking Press. Teacher packages for the above are $3.95, six-student packages are about $30.00. Curriculum development is by professional educators. Materials undergo extensive testing and revision, and have been implemented in over 40 states.

CEMREL, Inc., Central Midwest Educational Laboratory, 10646 St. Charles Rock Road, St. Louis, Missouri 63074

Beginning Experience in Architecture

10

A very useful book for elementary school teachers on conveying concepts of space and structure to children. The text presents background information and strategies for

developing ideas such as arches and domes, the organization of space, and masonry construction. Photographs show children absorbed in projects. Book also includes information on materials, field trips, and evaluation techniques. Ends with a thorough list of supplementary books, films, slides, manipulative toys, and more. Based on the author's work in an urban elementary school teaching architecture, one period a week, in an art program.

George E. Trogler, 1972, Van Nostrand Reinhold, Co., $8.95.

MATCH: Multi-sensory Learning Units for Social Studies: The City

A multi-media approach to teaching young children about the city. It is a kit (four books, 36 pictures, four aerials, a record, a model city board with magnetic buildings, a film, teacher's guide and maps) that is intended to be used over a two to three week intensive course, involving a possibility of 16 activities. Step by step lesson plans are carefully annotated, giving a description of the activity, its objective, materials to be used, procedures. Its objective is "to make children aware that the form of the city and the life of the city are related; that the city is a dynamic assembly of people and their living and working environment." One outing only, all other activities are carried out in the classroom. Originally developed by the Boston Children's Museum. Price for the complete unit is $557.00. Unit without film, $357.00. The kit can also be rented from the Boston Children's Museum.

American Science and Engineering, Inc. (Educational Division), 20 Overland Street, Boston, Massachusetts 02215.

Environmental Awareness

Adult

Twenty-six units on perception of and behavior in the environment, constituting "an introduction to decision-making for the man-made and natural environment." Units involve a range of activities and concepts, each organized by point of view, preparation, learning experience description, the author's own experience, objectives, activities for further exploration, and additional resources. Included are such topics as three-dimensional order, movement, and personal space and territoriality. The approach is very much experiential, including such activities as sensory awareness exercises, role-playing, sculpting, and the construction of models.

The units have been used at several levels: as a course or workshop for adults, a college course for pre-professional or general training in design, a pre- or in-service course for

teachers, and learning experiences adaptable for high school. Development began in 1971 and was funded by the Office of Education. To be available as a book in 1975. Write to Allied Professionals Educational Consulting Services, address below, for further information.

Joanne H. Pratt, Sarah B. Moore, James R. Pratt, and William T. Moore, Allied Professionals Educational Consulting Services, P.O. Box 19647, Dallas, Texas 75219.

GEE! Group for Environmental Education

A nonprofit corporation of architects and graphic designers developing curriculum, materials, and programs on man's interaction with the built environment. Materials generally employ a process-approach and are illustrated with noteworthy graphics.

Books are available from the publisher or from GEE!, 1214 Arch Street, Philadelphia, Pennsylvania 19107.

1 Our Man-Made Environment: Book Seven is designed for middle-school students, but has been more successfully used with older students and undergraduates. A resource-activity book intended to complement a more fully developed curriculum on the man-made environment. Seventeen exercises are organized by four topic questions: What is the man-made environment?, Why do we build our environment?, What determines the form of our environment?, and How do we change our man-made environment? Most of the exercises are design-oriented, involving the assembly of cut-outs, scaled spatial arrangements of rooms, streets, and towns, and simple structural models. All materials needed are included in the workbook, plus illustrations and interesting graphics. Other activities involve descriptions, judgments and setting priorities. Teacher guides are available with suggestions for use and elaboration based on wide range use of the program. However, teacher training is recommended. MIT Press, 1970, $4.95.

2 The Pennsylvania Advancement School Series has three curriculum units in the form of student workbooks. Each book is divided into lessons and contains text, exercises, and suggestions to the teacher.

$2.50 per book, 20 or more copies are $2.00 each.

a Introductory Unit to the Urban Environment is a social studies unit introducing the city as a physical place, personal place, and social organization. Seven lessons, involving neighborhood exploration, mapping, and answering questions on reading selections.

1A Adult

1B Adult

2

b Housing and the Urban Environment develops many concepts, including types of housing, physical design, personal and social responsibility, and uses of space. Divided into 14 lessons and contains worksheets, games, hypothetical situations, stories, etc. Refers frequently to Philadelphia, but can be used in any city. Contains a section on solving neighborhood problems in Philadelphia.

C Learning to get Around is an environmental unit that presents many mapping activities for understanding and drawing maps and visualizing sections of a city or block. Contains ten maps, six of which are of Philadelphia. Thoroughly drills map reading. Sixteen lessons. Uses a contractual agreement with the student, who earns points for correct answers to exercises.

3 The Process of Choice shows how to make decisions, particularly those affecting the environment. The publication is based on a series of four workshops originally intended for junior high school students. The series teaches a child to examine his preferences, resources, and constraints in making choices. The workbooks contain many questions, activities, punchouts, and games and are illustrated with striking two color graphics and photographs. Activities range from budgeting an allowance to solving a zoning problem. Teachers using the series should be quite familiar with the concepts presented; training or thorough personal preparation is needed. The series could well be used in conjunction with an actual project that entails decision-making and the setting of priorities. This project was funded by the National Endowment for the Arts, the Edgar J. Kaufman Charitable Foundation, and the Samuel S. Fels Fund. MIT Press, 1974, $10.00.

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Activity Guides

ESSENTIA, Environmental Studies

A set of activity cards and teacher preparation booklets. The goal is to create effective and humane environments. Sample activities: "Find out how far it is from your home to school," "Create a commercial for some aspect of your environment," "How is a garbage can like a stomach?" The focus of the cards is on the individual rather than the environment. Teacher booklets deal mainly with trust and openness. Illustrated with striking photographs. Developed by teachers and educators at The Evergreen State College, Olympia, Washington. Over 20,000 kits have been used.

Available from Addison-Wesley Publishers, Innovative Division, Sand Hill Road, Menlo Park, California 94025.

A Place to Live

A very personal, what-it-means-to-me approach to the natural and built environment for elementary school children. It includes suggestions for activities indoors and out, games, mapping exercises, questions for problem-solving, informative paragraphs on various aspects of the environment (climate, cities, animals). Teacher's manual gives objectives, background information, lesson plans, suggestions for related activities. Students' books $1.20, teacher's copy $2.10.

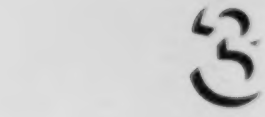
Educational Services Department, National Audubon Society, 1130 Fifth Avenue, New York, New York 10028 .

Something More You Can Learn from Your Schoolhouse

An introduction to the urban environment through understanding of the school environment. The people, processes, systems and organizations of the school are compared with those of the city. In the suggested activities students deal with all the people concerned with their school, from the architect to the custodian. The goal is an understanding of the facilities and resources of the school, which leads to an understanding of the facilities and resources of the city.

By Richard Saul Wurman, et al., to be published in 1975. Available from the National Association of Elementary School Principals 1801 North Moore Street, Arlington, Va. 22209.

Your City Has Been Kidnapped/ Deschool Primer



"A textbook, sensory guide, a sourcebook for locating city treasure and an investigation manual into city institutions, or perhaps, a simple game book." Activities involve people in interaction with the urban environment: mapping, investigating buildings, streets, people, the atmosphere and activities of the city. Emphasis is on environmental awareness, getting around in the city, the city's richness and possibilities for change. Contains exercises dealing with social/economic/political aspects of city life. Each activity can be done by itself or used with others simultaneously or in succession. The graphics are enticing and may be reproduced by the students. Best used as a teacher's "idea book," though older students may use the book themselves. Developed by teachers, students, and designers, originating as a series of wall posters proposing ways of investigating the city.

W. Ron Jones of Zephyros, 1972, available from Addison-Wesley Innovative Series, $3.00.

Vancouver Environmental Education Project

Houses

Most people work all
night and day,
To keep their houses
bright and gay
Some houses are
dark and gloomy,
Some houses are
big and roomy.
I pass houses
every day.
"Look at that house"
I sometimes say,
I'll live in it some
warm spring day.

Joey Jachimowicz
Age 10
University Hill

A project for all school levels that calls for the exploration of the immediate environment. A series of paperback books with a multitude of ideas on getting children to learn more about their local surroundings. Visits to shopping centers, libraries, fire and police departments, schools for the blind, etc., are proposed. Literally hundreds of questions are listed to get the children to think about the variety of activities that surround them. Simple measuring, mapping, drawing, listing, and counting exercises are given. Suggests several games to play in different locations, some for in the classroom. Asks children to comment on and criticize the environment they live in. Endeavors to show interrelation of man to environment at the primary level. Some titles include: "A Community Study for Primary Children," "Vancouver Houses" (a house dating exercise), "Neighborhoods," "Shopping Centers." Prices range form 85¢ to $2.50, with an additional 20% outside the B.C. School system. Order from B.C. Teachers Federation, Lesson Aids Service, 105-2235 Burrard Street, Vancouver 9, B.C.

Dr. C. J. Anastasiou, Director, Faculty of Education, University of British Columbia, Vancouver 8, B.C., Canada.

Yellow Pages of Learning Resources

A book on how to explore the world around you for children of any age. Modeled after the telephone book, it runs from "accountant" to "zoo" and shows how each is a source of information. Encourages readers to go places and ask lots of questions: ask a pharmacist what "generic" means, find out where your garbage goes, see the crushers in a rock quarry, ask the postman where he eats lunch. Illustrated with drawings and photographs. A list of schools and programs using this sort of approach to learning is appendixed. Developed by the Group for Environmental Education (GEE!), Philadelphia.

MIT Press, $1.95 (discount available to educational institutions).

Suggested Activities Using the School and Its Surroundings as a Resource for Environmental Education

A ten-page booklet for teachers containing a variety of activity suggestions: interview the garbage man, diagram the electrical system in your schoolroom, photograph students' routes to school, and study the effects of time on the environment. Available for $1.00.

GEE!, 1214 Arch Street, Philadelphia, Pennsylvania 19107.

Mapping Small Places

A big, colorful paperback book describing activities that thoroughly introduce mapping skills. Using rulers, protractors, and instruments which they make themselves, children learn the principles of measuring and mapping. Activities include drawing a floor plan of a room to scale, determining the height of a flagpole, drawing a cross-section of a snowdrift, and making contour maps of the school grounds. Flexible format, activities could be used separately, as lessons, or as a unit. A very readable book, well illustrated with color photographs of students in action. Written by four educators.

By Daniel F. Wentworth et al., 1972, Winston Press, 25 Groveland Terrace, Minneapolis, Minnesota 55403, $3.30.

Your City's Alive

This is a curriculum that has three "instructional units for experiencing the city" - Sensitivity Series, Creativity Book, Participation Book. Each contains a few pages

on activities, objectives, directions for teachers, followed by discussion topics and activity sections for the students. These can be xeroxed or dittoed for an entire class. Stresses personal awareness, skills development and social participation rather than cognitive levels of knowing about the immediate environment. Very open for individual interpretation. Calls for reflection, experiencing, visiting, doodling, writing - very action oriented with a multitude of ideas to choose from.

Florida State Environmental Education Project, 426 Hull Drive, Florida State University, Tallahassee, Florida 32306. Available in 1975 through ERIC, P.O. Drawer O, Bethesda, Maryland 20014.

The Nature of Recreation: A Handbook in Honor of Frederick Law Olmsted, Using Examples of his Work

12 Adult

Designed to accompany a museum exhibition on Frederick Law Olmsted, the father of landscape architecture, this book helps the reader understand his own recreational needs and preferences. The nature of recreation is presented through text, graphics, punchouts, and checklists. Is there a playground near your house? A ski slope? Did you know that the frisbee was introduced in California in the early 1950's? Appendices include a bibliography, and information on games. Funded by the Rockefeller Brothers Fund.

Richard S. Wurman et al., 1972, MIT Press, $4.95 (discount available to educational institutions).

Environmental Studies Program

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A guide for students who want to do individual, in-depth environmental research. It is interdisciplinary, experimental, describes in detail how to set up a project and carry it out. $1.00

Atlanta Board of Education,
Director of Purchasing, 210 Pryor Street, S.W.,
Atlanta, Georgia 30303.

People Space

Adult

An activity book suitable for a semester or mini-course. Focusing on how the environment, particularly "your town," meets people's needs. Suggests general activities e.g., space awareness exercises, as well as activities centering around the local community, e.g., a visit to a school to study design and research suggestions on local zoning. Activities and discussion questions are grouped in 13 sessions. Developed by a teacher and an architect, only a limited number are available. 75¢ per copy.

Melita Rodeck, 1969, American Association of University Women, 2401 Virginia Avenue, N.W., Washington, D.C. 20037

Comprehensive Programs

Environmental Education Center

K-12

A broad and integrated environmental education program for grades K through 12 which includes grade level activities of an interdisciplinary format. A variety of materials are available, including resource guide, strategy suggestions for implementing project activity, games, and a newsletter. Oriented toward local environment and local activities. Dealing specifically with the built environment are resource guides listing films, books, filmstrips, pamphlets, reports, records and tapes on urban problems and natural problems; Teachers' Environmental Resource Unit: The Automobile; On-Campus Teaching Guide (interdisciplinary, cross-referenced, several hundred teaching ideas utilizing school grounds); semi-programmed approach to field teaching. A bibliography, Teaching Guides Available, will be sent on request, and all materials are available at printing and mailing cost.

Lee County School Board, County Court House, Ft. Myers, Florida 33901.

Project ECOS

ECOS has designed and implemented an extensive demonstration program in environmental education, which stresses the political, economic, and human factors as well as the physical and scientific. The approach is interdisciplinary and action-oriented, emphasizing environmental problem-solving and cooperative efforts between schools and the community. "Environmental Stewardship" is the key phrase of the project, implying the development of environmental understanding and commitment to manage and improve man-environment relations.

Despite the regional emphasis of ECOS materials, the curriculum models were designed for wider dissemination and are being used in

the training institute. Their development by teachers and students for immediate use in their own schools has ensured their appropriateness for the given age level and subject area. They have also included pre- and post-testing devices to determine the effectiveness of each curriculum. These evaluations are now available. The following curricula are reviewed because of their explicit incorporation of the built environment into a total environmental study. Contact ECOS for training information and a full listing of available curricula. The project has been funded under the Title III, ESEA since 1972 and is affiliated with BOCES (Board of Cooperative Educational Services for Putnam and Northern Westchester Counties).

Environment - A Humanistic Approach, a multidisciplinary program (age 11).

A Local Environmental Study, a community/school project determining local environmental problems (ages 14-18).

Sense Awareness through Environment, emphasizes personal attitudes and action toward responsibility in our environment, includes lengthy activities list (for all ages).

Exploring for Action - Environmental Education K-12
Developed in a 1973 summer workshop. Interdisciplinary units of flexible length, developing awareness, knowledge, skills, attitudes and values.

ECOS (Environmental Education Community - Opportunity for Stewardship) Training Institute, BOCES Putnam-Northern Westchester, 845 Fox Meadow Road, Yorktown Heights, New York 10598.

Milwaukee Public Schools Environmental Education Program

Since 1971, the Milwaukee program has been developing a comprehensive interdisciplinary program in environmental education for grades K-12. Curriculum guides have been developed integrating environmental education into various subjects and grade levels: English, social studies, art, math, home economics, chemistry, biology, German, and life sciences (three examples with particular application to the built environment are described below). All the curriculum guides deal with the environment as a total concept and have many activities and suggestions dealing with the built environment in particular. Guides may be purchased; price list and titles are available as well as lists of resource materials and films.

Junior High Mathematics - Activities and Problems in Environmental Education
Seventy-one interesting activities and problems relating to environmental issues that may be incorporated into junior high school math curricula. Arranged according

55

to specific math topics - whole numbers, rational numbers, perimeters, areas, ratios, etc. Activities involve neighborhood and home surveys, reading problems, graphing, and mapping. Environmental subjects range from traffic, electricity, and phosphates to population problems and pollution.

12

Art/Environmental Aesthetics: A Guide for Elementary Teachers

An activity guide and possibly a curriculum unit in art for primary and intermediate grades. Focuses on total environmental awareness "to emphasize the vital inter-relationships that exist between environmental concerns and the art process." Activities are divided into three areas: Our Natural Environment, Our Man-Made Environment (houses, neighborhoods, cities, technology), and Our Inner Environment. With each activity is included information on environmental purposes, aesthetic purpose, medium, materials, preparation and subject matter, proposed sequence and additional activities

Exploring Your City: Milwaukee and You

A fifth grade unit to be incorporated into social studies curriculum. Field Trip Guide contains details of activities and concept development for before, during, and after city exploration. Resource materials - films, packets, pre-tests - are specific to Milwaukee, but guide can be for any community using similar concepts and activities.

Milwaukee Public Schools Environmental Education Program, P.O. Drawer 10K, Milwaukee, Wisconsin 53201.

Man and Environment for Intermediate Grades

14

A course in man-environment relations divided into four clusters, each of which is further divided into modules. Clusters are titled "Environment and the Individual," "The Web of Life," "The City as an Ecosystem," and "Spaceship Earth - Natural Resources Management," dealing with such topics as the urban environment, city planning, technology, industrialization, population, recycling, and decision-making. Although the format is of a whole course, modules are flexible and may be used independently. The curriculum guide is itself a framework for curriculum development, listing for each module concepts to be developed, content overview, and program objective, but not specific activity suggestions.

Developed at a workshop in 1973 by elementary classroom teachers with experience in environmental education and by educational specialists within curriculum development and environmental education. Development was sponsored by the National Association for Environmental Education through a grant from the U.S. Office of Environmental Education.

National Association for Environmental Education, 590 S.W. 73rd Street, Miami, Florida 33143, $4.00.

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Exploring Your Environmental Choices

A very flexible, interdisciplinary curriculum dealing with natural and man-made environment and including such topics as pollution, resource allocation, transportation, conservation, urban and rural planning. Involves experience-based learning in the school, home, community and nation. Stresses decision-making and trade-offs. Materials include transparencies, tapes, spirit masters for duplication, a teacher's guide, and a set of 30 family participation leaflets. Can be incorporated into environmental studies classes, science, social studies, English, etc. Can also be used independently as a mini-course. Implemented in 30 classes. Includes extensive resource list. Available from address below for $18.50.

Metropolitan Life, P.O. Box 232, New York, New York 10010.

Teaching Materials for Environmental Education

"Environmental investigation lesson plans" in a packet. Gives students an opportunity to investigate by themselves and emphasizes their role in exploring the environment. There are suggestions for group discussion and problem-solving, and a wide variety of activities in the field requiring a written summary of activities and evaluation of information. A separate book for teachers gives key questions to ask, suggests ways and means of "setting the stage" for projects, gives task card samples, supplementary charts and tables. A do-it-yourself approach to learning about the local environment.

Teaching Materials for Environmental Education Forest Service, U.S. Department of Agriculture: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, Stock number 0101-0234, 95¢.

Man and Environment for Secondary Schools

A secondary school program similar in format to the one for intermediate grades, consisting of modules with concepts and objectives. The 20 modules in this guide are presented independently and not clustered. Relevant modules deal with urbanization, transportation, environmental ethics, the economics of environment, and future planning. Suggestions for utilization of the modules in an existing school or course

are appendixed, as is an outline on initiating an environmental education program. Developed at a workshop in 1972 by environmental specialists.
Funded by the U.S. Office of Environmental Education.

National Association for Environmental Education, Robert H. McCabe, Director, 5940 S.W. 73rd Street, Miami, Florida 33143,$4.00.

A Teacher Guide for the Course: Toward the Year 2000

A guide to a multidisciplinary high school course. Developed in 1969-70 jointly by social studies, mathematics, English and science teachers in Colorado. Consists of 9 units ranging in length from 1 to 5 weeks; topics covered are decision-making, communication, nation-building, computer concepts, the environmental crisis, man-machine interaction, labor-management relations, urban problems, and the year 2000. The course objectives are 1) to develop decision-making abilities, 2) to improve communication processes, 3) to foster an awareness of the interaction between society and technology, and 4) to further understanding of our present technology and future developments. The guide is quite extensive, containing background information, principles of operation, lesson plans and schedules, worksheets that can be reproduced, evaluation techniques, reading suggestions. Funded by the National Science Foundation. Available for $6.58, prepaid, from the Eric Document Reproduction Service, P.O. Drawer O, Bethesda, Maryland 20014, order number ED 055 940.

By John Buchanan et al., Cherry Creek High School, Englewood, Colorado

Quality Urban Environmental Studies Training: Project Quest

A two-year program for high school students stimulating environmental awareness and problem-solving ability. The interdisciplinary approach involves math, science, and social science. Curriculum was designed by teachers to create environmentally conscious community members. While some activities are specific to Brockton, they may be used as models for other localities: Building an Environmental Awareness Through Activities and Investigations, Brockton Neighborhood Project, Consumerism, A Simple Study of Watersheds, and a neighborhood survey-mapping unit. A few units have also been developed at the elementary and junior high levels. Project began in 1971 and is funded by ESEA, Title III, and local sources.

Maurice J. Donnelly, Director, Brockton High School, 470 Forest Avenue, Brockton, Massachusetts 02401.

Classroom Aids

City Green

Collection of verse about two children growing up in the city. Eleanor Schick, Macmillan, 1974, 40 pp., $4.95.

Mike Mulligan and His Steam Shovel

A classic about a steam shovel and a construction dilemma. V.L. Bates, Houghton Mifflin, 1970 ed., $3.75.

Thruway

A small boy's ride to the city along a thruway. Anne Rockwell, Macmillan, 1972, 24 pp., $4.95

A Big City

An ABC book using objects found in a large city to illustrate the alphabet. Francine Grossbart, Harper & Row, 1966, $4.09.

Big City ABC

Giant letters and big pictures about the city, with text in verse. Sara R. Staats, Follett, $2.49.

Peter's Brownstone House

A picture book showing how New York City has grown and changed. Hilda Coleman, Morrow, 1963, $4.25

Let's Look Under the City

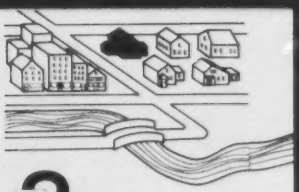
A simple explanation of how all our hidden utilities work - water, electricity, sewage, gas, telephones. A fun, instructive book with attractive drawings. Herman and Nina Schneider, William R. Scott, Inc., 1965, $3.25.

Growing Places

A manual of inexpensive "do-it-yourself" ideas for converting a classroom into a place that can stimulate environmental awareness. Schoolworks Inc., 222 East 89th Street, New York, New York 10028, $1.00.

59

A Map Is a Picture



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A beginning book on maps. Barbara Rincoff, Thomas Y. Crowell, 1965, $3.75.

This Is a Town

Story of the development of a town beginning with the settlement of its first families. Polly Curren, Titan, $2.97.

The Biggest House in the World

9

A snail's point of view on the size of his house. Leo Lionni, Pantheon, $3.95.

Environmental Geometry

Basic approach to shapes in the environment and their interrelationships. Nuffield Mathematics Project, John Wiley, 1969, $4.25.

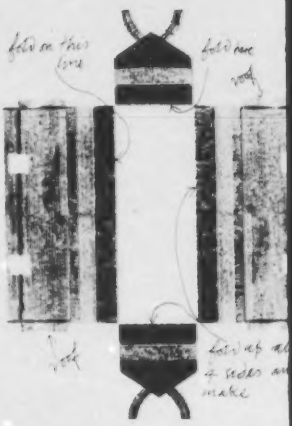
Eco-News

10

A monthly newsletter for urban children. Explores environmental problems, includes eco-ideas, information, activities, and contributions from readers. Nice graphics. May be used as a curriculum aid. Teacher's guide available with each issue. Subscription rate for 10 issues is 75¢ to $2.00 depending on quantity. Environmental Action Coalition, 235 East 49th Street, New York, New York 10017.

Tangent Series

Adult



A delightful series of fifteen booklets and brochures on design, architecture, and planning. Witty and informative titles such as "Certain Pitfalls to Avoid in Building a Ten Million Dollar House" and "Neolithic Notes on Urban Planning." Koppers Building Company, Inc., Koppers Building, Pittsburgh, Pennsylvania 15219, free.

Materials for the Open Classroom

Describes commercially available materials, games, blocks, puzzles, etc., which can be used in the classroom. Skip Ascheim (ed.), Delacorte Press, 1973, $3.00.

Catalog

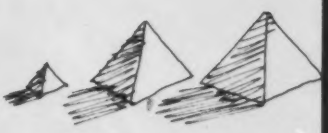
Includes kits to do cardboard carpentry, mechanical building, soapstone carving, photography and a list of publications on these subjects. The Workshop for Learning Things, 55 Chapel Street, Newton, Massachusetts 02160, free.

A Building on Your Street

Explores buildings - inside and out. Suggests activities like measuring and drawing. Explains simple construction and distinctive elements of buildings. Nice graphics. Seymour Simon, Holiday House, 1973, $3.95.

The How and Why Wonder Book of Buildings

Information and history of walls, buildings, and bridges, including descriptions of the construction of the Great Wall of China, the Royal City of Knossos, and the Brooklyn Bridge. Robert Barr, Grosset & Dunlap, $1.50.



Fun with the Environment

An eight-page cartoon/coloring/game book giving simple concepts of man's relation to natural and built environment. Office of Public Affairs, U.S. Environmental Protection Agency, Washington, D.C. 20480. 75¢.

Various Dwellings Described in a Comparative Manner

Collection of comparative descriptive drawings of dwellings from around the world through history. Book is helpful in understanding perspective and architectural drawings. Richard Saul Wurman, MIT Press, $6.95.

The City Book

A collection of puzzles and games, stories and riddles designed to make children aware of their city. Dorothy Freedman and Geraldine Richelson, Harlin Quist, Inc., $1.95.

62

Veronica

The delightful adventures of a hippopotamus who visits the city. Humorous illustrations. Roger Duvoisin, Alfred Knopf, 1961, $2.95; 95¢ paperbound.

70

Building Wrecking: The How and Why of a Vital Industry

Text and photographs on the methods of and reasons for building demolition. Jean Poindexter Colby, Hastings House, 1972, 96 pp, $5.95.

81

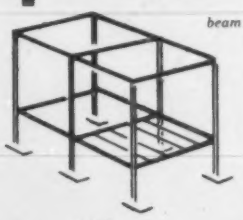
City Planning in the Elementary School

An article containing "A Student's City Planning Survey," a two-part survey for kids to record various characteristics of their community. A unit or two-week project. Reprint available from NJEA Review, 180 West State Street, Trenton, New Jersey 08608.
Alfred A. Arth and Ronald N. Short.
New Jersey Education Association Review (reprint), December, 1969, pp.42-43.

Building a Skyscraper

Outlines the process of building a skycraper from groundbreaking to the installation of the lighting fixtures. Illustrated with many photographs.
Martin and Eve Marie Iger. Young Scott Books (Addison-Wesley), 1967, 72 pp., $4.95.

84



Build Your Own Early American Village

Learn about a New England settlement - style and construction, living arrangements, and planning. Build a model village out of the colorful cutouts in the book. Forrest Wilson, AIA, Pantheon, 1973, $2.95.

91

billet

62

How People Live in the Big City

City life in its many forms is described in this textbook. Schools, recreation, housing, and public services are some of the topics discussed. Simple vocabulary. Muriel Stanek, Benefic, 1964, $2.40.

How the World's First Cities Began

The gradual development of the first cities. Well organized text, simply written. The final chapter deals with the problems of today's fast growing cities and the challenge they present to modern man. Arthur S. Gregor, E.P. Dutton, 1967, 64 pp., $4.50.

The Magic Stones

Clearly explains the discovery and principles of the arch and how it was used in the construction of the Cathedral of Notre Dame. Whitlesey House Alain, McGraw-Hill, 1957, 31 pp.

Looking at Architecture

A history of architecture, concentrating on monumental buildings. Roberta M. Paine, Lothrop, Lee & Shepard, 127 pp., $6.95.

Andy's Landmark House

Novel about a boy who urges the preservation of his old neighborhood. Hilda Coleman, Parents Magazine Press, 1969, 128 pp.

From Tepees to Towers

A brief survey of American architecture presented by means of striking and well-chosen photographs and a limited text. Carl E. Hiller, Little Brown, 1967, 106 pp., $5.95.

Pioneer Texas Buildings: a Geometry Lesson

Small buildings of simple volume are related to geometric solids and voids by means of large photographs, clear sketches and captions. No text and large format make this an easy tool to introduce abstractions to children. Clovis Heimsath, University of Texas Press, 1968, 159 pp., $12.50.

The Young Designer: A How-It-Is-Done Book of Design

On design, shape and structure with practical exercises and observations. Focuses on industrial design. Tony Hart, Frederick Warne & Co., 1967, 57 pp., $4.50.

Caves to Skyscrapers

An elementary exposition of how people throughout history have adapted shelter to their basic life needs. Irving Robbin, Grosset & Dunlap, $1.00.

Mapping

An introduction to map use, construction, and meaning. David Greenhood, University of Chicago Press, $2.95.

Roofs Over America

Opening our eyes to one aspect of the world—roofs. Marion Downer, Lothrop, 1967, 75 pp.

The Young Designer

Toward an understanding of good design and its applications. Many photographs and drawings. Tony Hart, Frederick Warne, 1968, $4.50.

What Kind of a House Is That?

On unusual and uncommon American houses. Well illustrated. Harry Devlin, Parents Magazine Press, 1969, 148 pp., $3.95.

Nation's Cities

A nontechnical magazine on urban growth and development, transportation, and planning for secondary students. Published monthly for $6.00 per year. National League of Cities, The City Building, 1612 K. Street, N.W., Washington, D.C. 20006.

Street

Magazine of the Environment; in part a locally (New York City) based journal on the environment. Also contains valuable and specific information on vital issues, as well as general information about cities and city-life in other parts of the United States and abroad. Published several times a year; $2.00 for a student subscription. Pratt Institute Center for Community and Environmental Development, 240 Hall Street, Brooklyn, New York 11205.

American Houses: Colonial, Classic, and Contemporary

History of domestic architecture explaining some of the influences on man - how he lives, where he lives, what he builds. Edwin Hoag, Lippincott, 1964, 160 pp., $5.95.

Fathers of Skyscrapers

A biography of Louis Sullivan, turn-of-the century Chicago school architect. Mervyn Kaufman, Little Brown, 1969.

Central City/ Spread City

Puts urban problems into the specific context of an anonymous city. Combines facts and comments by children. Alvin Schwartz, Macmillan, 1973, $4.95.

Cities and Metropolitan Areas in Today's World

Problems common in American cities are presented: planning, housing, transportation, urban renewal, with specific examples. Well illustrated with black and white photographs, maps, and plans. Samuel L. Arbital, 1968, Creative Educational Society, Mankato, Minnesota 56001, $6.95.

The Other City

Four teenage boys present their part of the city through their own photographs and text. Ray Vogel, David White, 1969, $4.75.

To Grandfather's House We Go: A Roadside Tour of American Homes

A colorful book on the architectural styles of American homes. Harry Devlin, Parents Magazine Press, $4.95.

Where the People Are, Cities and Their Future

A description of the development of cities; presents current problems and directions for the future. Kathlyn Gay, Delacorte, 1969, $3.95.

Architecture: A Book of Projects

Introduction to the vocabulary of function and design within the man-made environment. Well illustrated. Sets of color slides, with texts and teaching guides, coordinated with the chapters of the book are available from Architectural Color Slides, 187 Grant Street, Lexington, Massachusetts 02137. Franziska Hosken, Macmillan, 1968, $9.95.

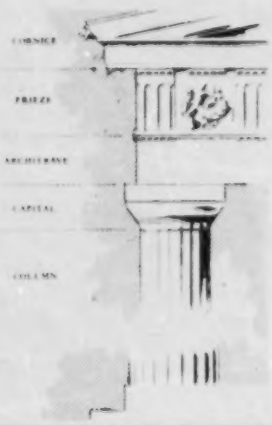
The Language of Cities

A book of projects helpful in understanding structural principles, classic symmetry, scale, and space. Helpful for classroom building and construction projects. Forrest Wilson, VanNostrand Reinhold, $6.95.

Signs in Action

Pictures of signs, mostly in use today, and a discussion of their function as a medium. James Sutton, VanNostrand Reinhold, $2.25.

Understanding Architecture



The history of architecture with emphasis on structural features such as the arch and the post and lintel. George Sullivan, Frederick Warne, 1971, 108 pp., $3.95.

Cities

Satisfaction of the personal, physical and psychological needs of man in the city. Lawrence Halprin, Van Nostrand Reinhold Co., 1963, 224 pp., $15.00.

Frank Lloyd Wright

Biography of the flamboyant architect. Includes commentary on Wright's work by architects and critics. Charlotte Willard, Macmillan, 1972, 224 pp., $5.95.

The Story of Design

How man from primitive time to the present has expressed his love of beauty through design in everyday useful objects as well as in works of art. Brief text accompanying large photographs. Marion Downer, Lothrop, 1963, 216 pp., $5.81.

Freeways

What freeways have done to us and what to do about them. Brief text accompanies the problem stated visually in pictures and graphics. Lawrence Halprin, Van Nostrand Reinhold, 160 pp., $15.00.

Architect, Creating Man's Environment

How an architect prepares for his career, what he does professionally, the importance of architecture today. Robert W. McLaughlin, Macmillan, 1962, 201 pp., $4.95.

City in All Directions

Poetry anthology on the sights and sounds experienced by those who live in the city. Arnold Adoff, Macmillan, 1969, $5.95.

Downtown: Our Challenging Urban Problems

A book on city problems - bad government, lack of planning, ghettos, crime, pollution, traffic, with chapters on community action and urban renewal. Robert A. Liston, Delacorte, 1968, 60¢.

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Adult

Discovering Design

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Introduces awareness of design in the environment through unusually good photographs of nature, man-made objects, and formed art. Presents beauty of line, pattern, rhythm, and abstraction. Marion Downer, Lothrop, 1947, 104 pp., $4.25.

Planning Our Town

One of the few books specifically for young people concerned with city planning. Included are chapters on rebuilding older parts of cities, starting from the beginning and planning a brand new city, problems of water and air pollution, and the race for open space and how best to use it. Martha E. Munzer, Knopf, 1964, 179 pp., $4.99.

Urban America

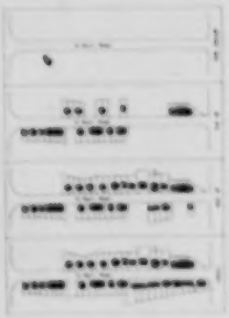
Readings on urbanization for high school students, its historical aspects and current issues. Scott Foresman, $1.89.

So You Want to Be an Architect

What architecture is, what architects do, and what you should do if you want to become one. Bibliography and list of accredited schools of architecture. Carl Meinhardt et al., Harper & Row, 1969, $4.95.

Urban Studies, Environmental Studies Assignment 3

A workbook on conducting an area study, including map-making, a housing survey and industrial study, and a survey of streets and bridges. John W. Walsh, Schofield & Sims, Ltd., 1971 Huddersfield, England.



The City in the World of the Future

One of three books on the world of the future. This one is on cities, how we will deal with the doubling of the population, transportation, housing, the importance of planning, and more. Illustrated with black and white photographs. Hal Hellman, Lippincott, 1970, $5.95.

Inflatocookbook

A how-to book on constructing inflatable polyethylene environments. Zany, instructive graphics. Chip Lord et al., 1973, The Ant Farm, Box 471, San Francisco, California 94101, $1.50.

Old Cities and New Towns

Discusses Philadelphia's old and new plans and changes. Alvin Schwartz, Dutton, 1968, $5.95.

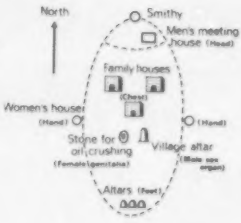
The Urban Reader

Presents pros and cons of the city through writings by artists, reporters, and others. Includes a photographic essay. Teacher's manual available. For college freshmen or advanced high school students. Susan Cahill and Michele F. Cooper (eds), Prentice-Hall, 1971, $8.75; $5.35 paperbound.

Adult

Village Planning in the Primitive World

An advanced high school and college level introduction to "primitive" concepts of planning. Douglas Fraser, George Braziller, 1968, $2.95.



Games and Simulations

CLUG: Community Land Use Game

An urban simulation for secondary grades. For about 15 players, playing time is six hours or, preferably more. $4.95 from Macmillan Company, School Division, 866 Third Avenue, New York, New York 10022.

The Energy Environment Game

Developed by Creative Studios, Inc., this is a simulation for junior and senior high school students on energy consumption and management. Involves problem-solving and decision-making, specifically, the question of whether a hypothetical community should build additional power plants and, if so, where, when, and how. Designed for use in science, social studies, and English classes. Playing time is flexible, ranging from six to fifteen hours; 20-40 players are required. Teacher workshops have been conducted in Michigan. Teacher's guide, 32 player's guides, role profile cards, filmstrip, record, map, and reference materials are included in the complete game package. Available to schools for $20.00 from Dr. Richard B. Sheetz, Coordinator, Educational Services, Edison Electric Institute, 90 Park Avenue, New York, New York 10016.

Housingplan

Concerned with housing in a suburban community, and the attitudes, values, problems, interest groups affecting planning decisions. For 20 to 100 players, playing time is six to eight hours. Can be played on the University of Michigan IBM 360/67 computer or manually. Standard Fortran version is in preparation. For further information contact Larry C. Coppard, Urbex Affiliates, 474 Thurston Road, Rochester, New York 14619. Developed by Larry C. Coppard.

Inner-City Planning

An educational simulation of urban problems for high school students, designed for use in social studies classes. Students assume roles of legislators, businessmen, community members, and others concerned with the development of an urban area. From 12 to 40 people may play. The game requires six class sessions; play centers around planning meetings and public meetings in which specific problems are negotiated. The teacher's kit ($15.85) includes a manual, role profile cards, area map, and one player's manual. Each player needs a manual; they are available in sets of ten ($5.25 per set). The teacher's manual alone is 30¢. All materials are re-usable. Available from Macmillan Company, School Division, 866 Third Avenue, New York, New York 10022. Developed by Creative Studios, Inc.

Land Use Game

Five groups of planners work to integrate the natural environment and human needs through decisions about housing. Concepts of zoning and development are presented. Each planning

group is equipped with playing surface and re-usable stick-on houses, trees, roads, etc. Suitable for secondary students. Playing time is flexible; a "round" takes about 45 minutes, and materials provided are adequate for at least three rounds. Game variations are suggested. Game kit is available for $2.50 from Education Ventures, Inc., 209 Court Street, Middletown, Connecticut 06457. Supplementary student text for grades 7 to 10, Mike's World, Your World, is available for 75¢.

Metropolis

Deals with the growth and development of a metropolitan area, with emphasis on capital budgeting and public expenditure. A decision-making game for 9 players, requiring, several one-hour cycles for play. At present, game must be played on an IBM 1130 or 360/70 computer; several games can be run simultaneously. Instructions for the manual version are to be published in the near future by Sage Publications. For further information, write Urbex Affiliates, 474 Thurston Road, Rochester, New York 14619. Developed by Richard D. Duke.

Neighborhood

Four teams of "community planners" compete to build the ideal community. For 4 to 12 players, designed for grades 3 to 7. $16.00 from Games Central, 55 Wheeler Street, Cambridge, Massachusetts 02138.

Open Space

Six interest groups negotiate about proposals for a town's last undeveloped tract of land. Play consists of three rounds, each lasting about an hour. As few as 6 or as many as 100 players may participate. Materials consisting of posters, decision cards, and instructions are available for $4.95 from Education Ventures, Inc., 209 Court Street, Middletown, Connecticut 06457.

Sitte

Five interest groups use their influence to produce changes in the city. Suitable for high school students. Playing time is from two to four hours; $3.00 for a sample set of the simulation; $35.00 for a 25-student kit; $50.00 for a 35-student kit; additional student forms available. Simile II, P.O. Box 1023, La Jolla, California 92037.

Streets Ahead

A game for children to strengthen their awareness of the city environment by simulating city problems and situations. Topics include the use of old buildings, housing, shopping, choices, entertainment, and social services. Good Luck cards direct children to undertake considerations of various uses or happenings involved with the developments, again, directed toward a common goal. This game establishes an interlinked series of projects or integrated studies with many possible uses. Available for about $3.50 (including postage) from Priority, Harrison Jones School, West Derby Street, Liverpool, England L7 8TP.

WALRUS

On making decisions affecting water purity. Five teams representing public and private groups adopt various economic and political interests in a city and its rural surroundings. As play progresses, water pollution problems arise that the teams must deal with. Playing time is five hours; 15-30 players may participate. Complete kit, including plastic pieces, gameboard, instructions, record sheets, and play money is available for $75.00 from Urbex Affiliates, 474 Thurston Road, Rochester, New York 14619. Developed by Allan G. Feldt.

New Town

The player's goal is to build a new community from the ground up. Players bid for land, construct various kinds of buildings, hold meetings, vote, bargain, and engage in various other activities; $16.00 for a 10-student kit; $28.00 for a 20-student kit, available from Harwell Association, Box 95, Convention Station, New Jersey 07961.

Other distributors

Extension Gaming Service
University of Michigan
412 Maynard Street
Ann Arbor, Michigan 48104

Gamed Simulations, Inc.
FDR Station
P.O. Box 1747
New York, New York 10022

Instructional Simulations, Inc.
2147 University Avenue
St. Paul, Minnesota 55114

Urbandyne
P.O. Box 134
Park Forest South, Illinois 60460

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Commercial publishing houses that distribute a number of games include Bobbs Merrill Co., Macmillan Co. (School Division), and Scott Foresman and Co.

Printed materials

The Guide to Simulation Games for Education and Training

David W. Zuckerman and Robert E. Horn. Reviews over 600 games. Available for $15.00 from Information Resources, Inc., P.O. Box 417, Lexington, Massachusetts 02173.

How to Design Educational Games

Ray Glazier, 1969, paperback. Available for $2.50 from Games Central, c/o Abt Associates, Inc., 55 Wheeler Street, Cambridge, Massachusetts 02138.

Learning Through Games

Eliot Carlson, 1969, $4.50. Available from Public Affairs Press, 419 New Jersey Avenue, S.E., Washington, D.C. 20003.

Learning With Games

Cheryl L. Charles and Ronald Stadsklev; (eds.). Reviews 70 social studies games; has an extensive bibliography. Available for $4.95 (prepaid) from SSEC Publications, 855 Broadway, Boulder, Colorado 80302.

Simulation/ Gaming News

A newsletter on gaming/simulation as an instructional technique; $4.00 for five issues. P.O. Box 3039, University Station, Moscow, Idaho 83843.

Simulation and Gaming in Education

P.J. Tansey and D. Unwin, 1969; available for $5.00 from Harper & Row Publishers.

Simulation in the Classroom

John L. Taylor and Rex Walford, 1972; paperback for $1.95 available from Penguin Books, Inc.

Films, Filmstrips, and Film Loops

Because there are literally hundreds of film-media materials on the built environment, we have listed only organizations and other sources that can provide the teacher with annotated information on the content, cost, and distributors of films dealing with this topic.

American Institute of Architects Films

Audio-Visual Librarian, The American Institute of Architects Library, 1735 New York Avenue, N.W., Washington, D.C. 20006. Publishes a brochure listing AIA films on architecture and design that are available for loan or sale.

Buyer's Guide to Environmental Media

Quarterly, $2.60 per issue. Environment Information Center, 124 East 39th Street, New York, New York 10016. Reviews of films and other materials on the environment.

Critical Index of Films on Man and His Environment

From Interstate Printers and Publishers, Inc., Danville, Illinois 61832, 1972, $1.25.

Environment: A Filmography

Sanford Summers, Library Journal, April, 1970, pp. 1575-1577. A selected, annotated list of 45 films on the natural and man-made environments.

The Environment Film Review

Published annually, $20.00. Environment Information Center, 124 East 39th Street, New York, New York 10016. Reviews over 600 films.

Extension Media Center

University of California, Berkeley, California 94720. Publishes a newsletter that includes a number of films on the environment.

Film Fare– A Catalogue of Films and Filmstrips produced by the U.S. Department of Housing and Urban Development

Office of Public Affairs, U.S. Department of Housing and Urban Development, Washington, D.C. 20410. Annotated list of 22 films and filmstrips on housing, urban renewal, historic preservation, open space and other urban concerns.

Films on Community Affairs: Urban and Rural

Carolyn H. Kitterman, 1969; available for $6.00 from the Council of Planning Librarians, Exchange Bibliography #94, P.O. Box 229, Monticello, Illinois 61856. Annotated list of over 200 films on a wide range of topics, including cities and towns, architecture, building, city planning, urban design and renewal, downtowns, and citizen participation.

Motion Picture Films on Planning, Housing, and Related Subjects- A Bibliography

Available for $2.00 from American Society of Planning Officials, 1313 East 60th Street, Chicago, Illinois 60637.

Review of Audio-Visual Materials for Environmental Education

Compiled by Susan Guhl, 1973, Environmental Studies Institute, Syracuse University, 213 Huntington Hall, Syracuse, New York 13210. Reviews by classroom teachers of 45 environmental films and filmstrips.

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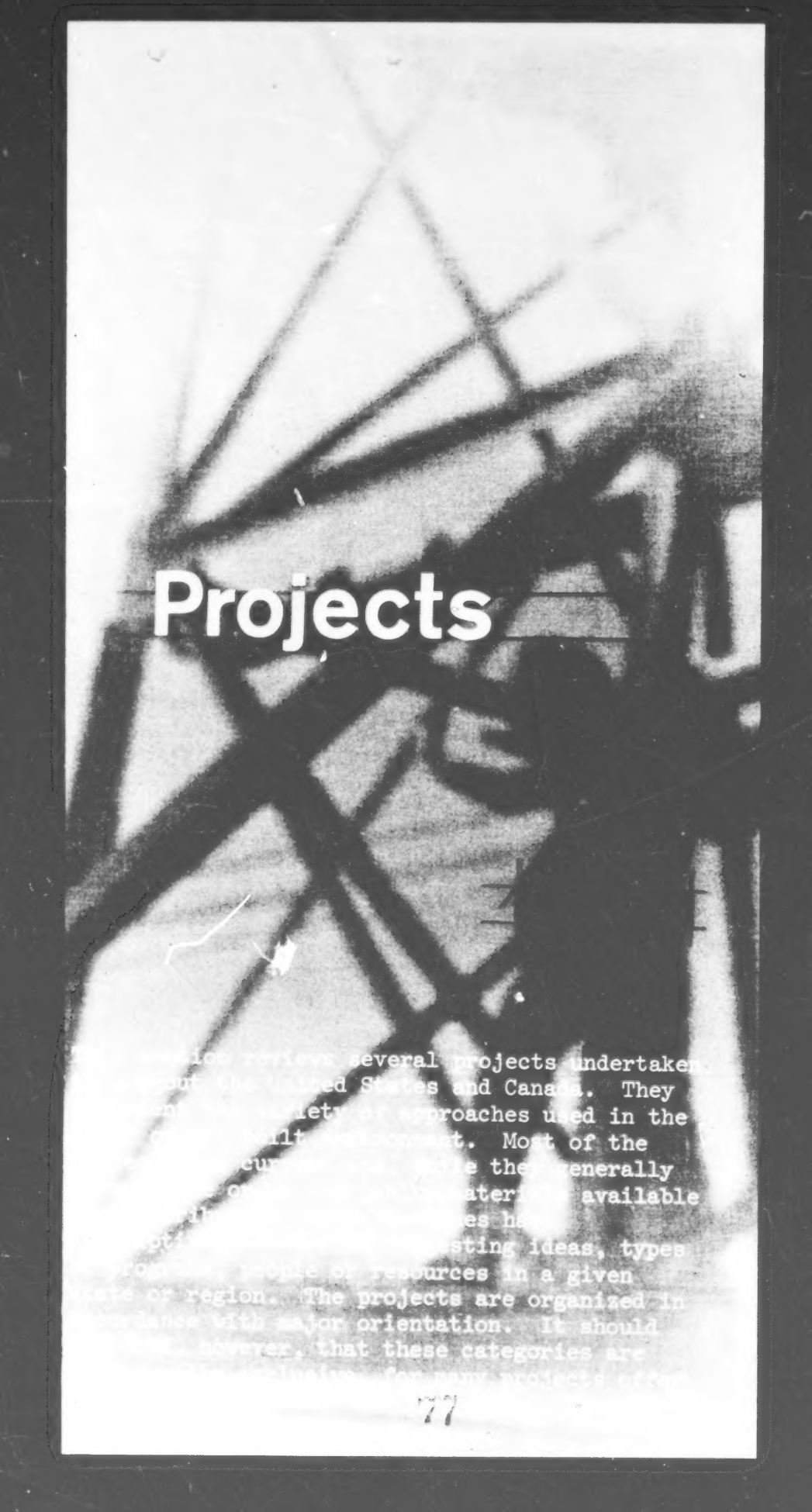
Suggested Series of Movies for a Course in Urban Planning

Ambrose Klain, 1970, $1.00, Exchange Bibliography #154; available from the Council of Planning Librarians, P.O. Box 229, Monticello, Illinois 61856. A list of 22 films, all color and sound, on urban problems and planning. A few entries on general environmental issues.

Urban Outlook: A Selected Bibliography of Films, Filmstrips, Slides and Audiotapes

The U.S. Department of Housing and Urban Development, 1969. Available from the U.S. Government Printing Office, Washington, D.C. 20401.



Projects

...several projects undertaken ...ed States and Canada. They ...proaches used in the ...t. Most of the ...e the generally ...available ...sting ideas, types ...sources in a given ...region. The projects are organized in ...with major orientation. It should ...however, that these categories are

Architects in the Classroom

There are several projects that involve architects and planners in classroom activities and teacher-training. Such activities as model-building, perspective drawing, mapping, and community planning are greatly enhanced by the direct help and encouragement of the professional designer. In many projects, the architects and teachers work closely together providing a rich learning experience for both. This interaction between the schools and the professions has much to offer.

1 ACSA Environmental Experience Stipends Program, Association of Collegiate Schools of Architecture, 1735 New York Avenue, N.W., Washington, D.C. 20006. An extensive program of teacher-training in-service workshops in environmental experience - architecture, design, awareness, spatial interaction, etc. Led by selected architecture students throughout the country receiving ACSA stipends. Many students work in the classroom directly with the children.

2 Box City: An Experiment in Spatial Education, Kansas City Chapter AIA, 441A Commerce Bank Building 922 Walnut Street, Kansas City, Missouri 64106. Students of all age groups can plan and build a model city out of cardboard boxes. An architect is then invited to visit the classroom and discuss the model with the students. The projects can be as extensive and sophisticated as the teacher and students desire.

3 Environmental Education Project, Rhode Island School of Design, Richard E. Polton, Box 636, 2 College Street, Providence, Rhode Island. Architecture students work in high school art classes on the design process, dealing with specific design problems, mapping community planning, the client-designer relationship and possible redesigning of school space.

4 Introductory Design Course, Badger High School, Derald M. West, AIA, West and Seron, 326 Center Street, Lake Geneva, Wisconsin 53147.
An architect introduces high school students to architecture, engineering and interior design during a six-month course in the Industrial Arts Program. Students become involved in evaluation and design alternatives of actual proposed buildings in the area.

5 Urban Awareness and Environmental Understanding, George Zimberg, Administrative Director, 1000 Massachusetts Avenue, Cambridge, Massachusetts 02138.
Architects from the Boston Society of Architects make regular visits to fourth grade social studies classes in the Cambridge Public Schools. They introduce the students to their own city and aspects of the built environment through classroom projects and field trips. Each architect develops his own content and approach, sometimes working directly with the classroom teacher.

Visual Arts and the Built Environment

Another approach to this field is through the visual arts. Many museums have student exhibits and offer workshops and classes in such areas as urban ecology, architectural appreciation, and environmental art. They are a rich resource for students and teachers as an extracurricular activity or school field trip. They also provide ideas and suggestions for teachers to implement in their own art classes.

1 Boston Children's Museum, The Jamaica Way, Boston, Massachusetts 02130.
Designed an exhibit and sponsored a community event on the local center street, emphasizing historical development of the commercial center and the activities and resources of the local merchants.
(See Resource Centers, p. 18.).

2 Alexander M. White Natural Science Center, The American Museum of Natural History, Central Park West, New York, New York 10024.
Displays a permanent museum exhibit on urban ecology for elementary school children. Provides elaborate materials for pre-visit classroom activities and follow-up field trips. (See Resource Centers, p. 18.).

3 Junior Arts Center, City of Los Angeles, Department of Municipal Arts, 4814 Hollywood Boulevard, Los Angeles, California 90027.
Offers a course involving a series of field trips to different natural and man-made environments with comparative observations and awareness studies for ninth to twelfth grades. Also a class on Buildings, Freeways, and Anthills is offered where tenth to twelfth grade students design and build city furniture.

4 VALUE: Visual Arts Laboratory in Urban Education, Institute of Contemporary Arts, 955 Boylston Street, Boston, Massachusetts 02115.
The city as a classroom with professional artists, designers, and planners as guides for high school students. Study of recreation in the city and public urban art involves use of multi-media, building exercises, and city tours.

Using Local Resources

To study the built environment, students need only look around them. The school and school yard alone offer many opportunities, but the community at large offers even more. A walk around the block or more extended field trips can provide examples of architectural styles, neighborhood planning, traffic patterns, and zoning. The following projects focus on the use of local resources as an approach to understanding and appreciating the built environment.

1 Alaska State Department of Education, Jo Michalski, Pouch F, Juneau, Alaska 99801.
Students study geometry through observation of shapes and forms in their environment. The project centers on student field trips around the local school neighborhood.

2 MOBOC - Mobil Open Classroom, Dr. Charles Rusch, Director, 12361 Deerbrook Lane, Los Angeles, California 90049.
A special school on wheels for fourth to eighth grade students. All subject areas are studied

through exploration of the city's resources and through the use of existing institutions, such as libraries and museums, as learning sites.

3 Project Canada West, Box 1441, Westlock, Alberta, Canada.
This is an extensive curriculum development program on the urbanization of Canada - structural growth, urban dynamics, the inner city, rural-urban transition, environmental concepts and urban aesthetics. Prototypical units have been pilot-tested and some are available now. Reports of the curriculum development process are available through the ERIC system. (See Resource Centers, p. 18.)

4 Urban Experiential Environmental Studies Curriculum Project, John Muir Institute for Environmental Studies, Inc., 2118-C Vine Street, Berkeley, California 94709.
Staff members are developing field trip guides and kits to be available in 1975 for visits to the local Public Utility, Power Plant, Sewage Plant, Trash Dump, Supermarket, Transportation Facilities, Government Agency or City Street. They emphasize individual student projects that can be generated from the site visits.

Experiencing the Built Environment

A further step toward environmental awareness may be taken by more direct interaction with the environment. Several projects emphasize this experiential process by engaging the students in, among other things, exploring, role-playing, or even dancing in familiar or unusual environments. This can lead to a more immediate awareness of how different environments affect the students and how their experiences can enhance their perceptions.

1 City Building Educational Program, Doreen Nelson, Project Director, California Sulphur Springs Union School District, 18830 Soledad Canyon Road, Saugus, California 91351. A comprehensive course for third to sixth graders involving gaming and simulation, experiencing home-made mini-environments and decision-making, all culminating in the building of a model city. Architecture students work directly with teachers and children; teachers work in teams and attend intensive workshop sessions. Brochure available.

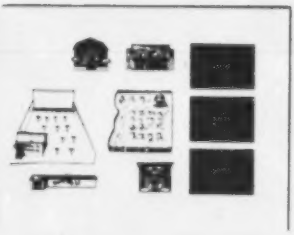
2 Environmental Living Program, John Muir National Historic Site, 4202 Alhambra Avenue, Martinez, California 94553.
One of many historic sites in California and Arizona that sponsors overnight field trips for school classes where students take on the roles of people who once lived in these environments. Sites include a Mexican California rancho environment at the Petaluma Adobe State Historic Park, a Civil War military garrison at Fort Point National Historic Site, a turn-of-the-century sailor's environment on board ship at Hyde Street Pier in San Francisco, a 19th century school room environment at Tubac State Historic Park, a Spanish colonial mission community at Tumacacori National Monument and an 1800's Chinese field hand's experience at the above site. Brochure available.

3 Environmental Scores and Events, Marilyn Wood, 100 Third Avenue, New York, New York 10003.
A unique program in experiencing the urban environment through following a score of actions that lead students through the city, making them more aware of the various urban elements and their potential interaction with them.
Ms. Wood, a dancer and choreographer, develops each score uniquely for the particular participants and environment.

Changing the Built Environment

Many projects stress active participation in actual improvements of the school site or community as a learning experience. Through study of a selected environmental problem, students and teachers can put their awareness and concern to work. This involves a more extensive process requiring approval of school officials or public agencies, but the rewards are certainly worthwhile. Students acquire a wide range of skills and knowledge which become more valuable through their implementation.

1 The Land and Me, Main Public Broadcasting Network, Grayce Papps, Project Director, Alumni Hall, University of Maine, Orono, Maine 04473.
A public T.V. series that presented alternatives for the use of a hypothetical piece of land in Maine. Viewers had an opportunity to phone-in their decisions about proposed uses. Programs dealt with public versus private land ownership, planning, legislation, and decision-making. Eco-Acres, an imaginative land use game, was developed and distributed in conjunction with the series.



2 Minnesota Teen Corps, 3353 31st Avenue South, Minneapolis, Minnesota 55406.
A summer volunteer youth program involved in actual building and land development. Past projects include improvements of camps and facilities for the mentally retarded, Indian reservations, home for delinquent boys and recreational areas for low income groups.

3 Project WHY (Washington Environmental Yard) University of California Laboratory School, 2300 Grove Street, Berkeley, California 94704.
Redevelopment of playground for school and community use as an educational recreational resource. Students, teachers, and the community have been extensively involved in the process. Brochure available.

4 The Regional Recycling Center, ECOS, 845 Fox Meadow Road, Yorktown Heights, New York 10598.
A cooperative school and community venture sponsored by Project ECOS (see Resource Centers, p. 18 and Comprehensive Programs, p. 54). A proposed recycling center that receives, processes, and markets solid waste materials and provides educational facilities for solid waste management.

5 St. Paul Open School Playground Project, Joe Nathan, St. Paul Open School, 1885 University Avenue, St. Paul, Minnesota 55104. Students, aged 8 to 16, with the help of architecture students researched, designed a model, and constructed their school playground. Costs were minimized through contributed and scavenged materials and their own free labor.

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Organizations

The following is a list of organizations concerned with the built environment and with environmental education. Teachers should write for information on their activities, publications, and services.

Alliance for Environmental Education, LLC 805, University of Wisconsin at Green Bay, Green Bay, Wisconsin 54302.

American Institute of Architects, 1735 New York Avenue, N.W., Washington, D.C. 20006.

American Institute of Planners, 1776 Massachusetts Avenue, N.W., Washington, D.C. 20005.

American Society of Planning Officials, 1313 East 60th Street, Chicago, Illinois 60637.

Citizen's Advisory Committee on Environmental Quality, 1770 Pennsylvania Avenue, N.W., Washington, D.C. 20006.

Committee on Environmental Education, AIA Philadelphia Chapter, Arthur Jones, Chairman, Architects Building, 17th and Sansom Streets, Philadelphia, Pennsylvania 19103.

Committee for Environmental Information, 438 North Skinker Boulevard, St. Louis, Missouri 63130.

Early Childhood Education Study, 90 Sherman Street, Cambridge, Massachusetts 62140.

Educational Facilities Laboratories, 850 Third Avenue, New York, N.Y. 10022

Environmental Action Foundation, 732 DuPont Circle Building, Connecticut Avenue, N.W. Washington, D.C. 20036.

Environmental Educators, Inc., 1621 Connecticut Avenue, N.W., Washington, D.C. 20009.

John Muir Institute for Environmental Studies, 1098 Mills Tower, San Francisco, California 94104.

National Association for Environmental Education, 590 S.W. 73rd Street, Miami, Florida 33143.

National Education Association, 1201-16th Street, N.W., Washington, D.C. 20036.

National League of Cities, The City Building, 1612 K Street, N.W., Washington, D.C. 20006.

National Trust for Historic Preservation, 740 Jackson Place, N.W., Washington, D.C. 20006.

Scientists' Institute for Public Information, 30 East 68th Street, New York, New York 10021.

Urban Land Institute/Urban Land Research Foundation, 1200 18th Street, N.W. Washington, D.C. 20036.

Urbanarium Planning Office, Rochester Institute of Technology, 1 Lomb Memorial Drive, Rochester, New York 14623.

Federal Agencies

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Office of Environmental Education, Office of Education, HEW, 440 Maryland Avenue, S.W., Washington, D.C. 20202.

National Park Service, Department of the Interior, Washington, D.C. 20240.

Department of Housing and Urban Development (HUD), Office of Public Affairs, 451 7th Street, N.W., Washington, D.C. 20410

Environmental Protection Agency, 401 M Street, N.W., Washington, D.C. 20024.

U.S. Forest Service, Department of Agriculture, Washington, D.C. 20250.

Local Sources

In addition, there are numerous local, state, and regional organizations that deal with issues concerning the built environment. A list of some of these organizations follows:

Chamber of Commerce

Boy Scouts, Girl Scouts, Campfire Girls

Junior League

Local/State Planning Commission

State Environmental Education Commission

Museums (especially those devoted to science and technology)

Zoning Board

Junior Chamber of Commerce

Sourcebooks

The following references cite agencies, organizations, and other groups involved in the built environment and environmental education.

Directory of Environmental Consultants

Lists individuals willing to provide part-time, free environmental consulting to schools, etc. $6.00 from P. O. Box 80002, University Station, St. Louis, Missouri 63018.

Directory of Projects and Programs in Environmental Education for Elementary and Secondary Schools

John P. Disinger and Beverly Lee (eds.), ERIC/SMEAC, November, 1973, 670 pp., $8.50. An annotated directory of environmental education programs, both natural and man-made, arranged by state. Information on staff, objectives, materials, evaluation, and teacher-training for over 300 programs.

Environmental Education Programs and Materials

Stanley L. Helgeson et al., National Center for Education Communication, Office of Education, HEW. Available from Superintendent of Documents, 1972, 105 pp., $1.00. Review of selected programs and materials, including five case studies.

Environmental Education Material

National Science Teachers Association, 1201-16th Street, N.W., Washington, D.C. 20036, 1973, 20 pp., $2.00, Stock #471-14650. A catalogue of free and low-cost materials for science, social studies, and industrial arts for elementary and secondary environmental education.

Environmental Education: Reference Sources for Development of Programs and Sites

National Park Service, U.S. Deparument of Interior, Washington, D.C. 20240. Annotated list of government agencies, environmental groups, trade associations, professional societies, research organizations, universities, film distributors, and local organizations. Also, some bibliographic references. 40 cents, from the U.S. Government Printing Office.

Environmental Information Sources Handbook

Garwood R. Wolff (ed.), 1974, Simon & Schuster. $25.00. A comprehensive source with 400 pages of descriptions of national and regional organizations, including civic and conservation groups, engineering and professional societies, industry associations, government and state agencies, universities, and study centers. Gives information on the nature of each organization, its membership, services, and periodicals.

Environmental Investigations - Getting Help from Uncle Sam

National Science Teachers Association, 1201-16th Street, N.W., Washington, D.C. 20036. 1971, 7 pp., 50¢, Stock #471-14620. Reprint from the October, 1971 issue of The Science Teacher describing the environmental activities of government agencies and listing publications available from them.

Environment U.S.A.: A Guide to Agencies, People, and Resources

Compiled and edited by The Onyx Group, Inc., 1974, Bowker Pub., $15.95. Sections on federal and state agencies, private organizations, environmental consultants, studies programs, films, federal legislation, conferences, and media. Includes a glossary.

Free and Inexpensive Environmental Education Resource Materials for Elementary and Secondary Teachers

Dr. John Mooty, Division of Education, Indiana University Southeast, Warder Park, P.O. Box 459, Jefferson, Indiana 47130. A catalogue of free and low-cost materials, $1.00.

Groups that Can Help: A Directory of Environmental Organizations

Environmental Protection Agency, 1972. Available from the U.S. Government Printing Office, 25¢. A thoroughly annotated pamphlet listing 65 environmental groups, their services, and publications.

Help for Environmental Programs

U.S. Forest Service, 1974. Available from the U.S. Government Printing Office, 25 cents. Names and addresses of federal, state, and local sources of help, plus a bibliography of books.

The Open University

Open University Department, Harper & Row Publishers. Coordinated units at the college level developed in Britain. Include books, tapes, and films. Relevant units are Urban Development and the Man-Made World. Write Harper & Row for catalogues of specific materials.

World Directory of Environmental Education Programs

Philip W. Quigg (ed.), R.R. Bowker Co., 1973, 289 pp. Directory of 1,100 post-secondary environmental, teaching, and training programs.

Publishers

Harry N. Abrams, Inc., 110 East 59th St. New York, N.Y. 10022.

Addison-Wesley Publishers, Sand Hill Rd., Menlo Park, Calif. 94025.

Allyn & Bacon, Inc., 470 Atlantic Ave, Boston, Mass. 02210.

Benefic Press, 10300 W. Roosevelt Blvd., Westchester, Ill. 60153.

George Brazillier, Inc., Park Ave., New York, N.Y. 10016.

Thomas Y. Crowell Co., 666 Fifth Ave., New York, N.Y. 10019.

Delacorte Press, 1 Dag Hammarskjold Plaza, 245 East 47th St., New York, N.Y. 10017

Dowden, Hutchinson and Ross, Inc., 523 Sarah St., Box 699, Stroudsburg, Pa. 18360.

E.P. Dutton & Co., Inc., 201 Park Ave. S., New York, N.Y. 10003

Follett, 1010 West Washington Blvd., Chicago, Ill. 60607.

Ginn & Co., 191 Spring St., Lexington, Mass. 02173.

Grosset & Dunlap, Inc., 51 Madison Ave., New York, N.Y. 10010.

Harcourt, Brace Jovanovich, Inc., 757 Third Ave., New York, N.Y. 10017.

Harper & Row Publishers, Inc., 10 East 53rd St., New York, N.Y. 10022.

Hastings House Publishers, 10 East 40th St., New York, N.Y. 10016.

Horizon Press, Inc., 156 Fifth Ave., New York, N.Y. 10010.

Houghton Mifflin, 110 Tremont St., Boston, Mass. 02107.

Alfred Knopf, Inc., c/o Random House, 201 East 50th St., New York, N.Y. 10022

J. B. Lippincott Co., E. Washington Square, Philadelphia, Pa. 19106.

Little, Brown & Co., Inc., 34 Beacon St., Boston, Mass. 02106.

Lothrop, Lee & Shepard Co., 6 Henderson Drive,
West Caldwell, N.J. 07006.

Macmillan Co., 866 Third Ave., New York,
N.Y. 10022.

McGraw-Hill Book Co., Princeton Road,
Hightstown, N.J. 08520

Methuen Educational Ltd. 2330 Midland Ave.
Agincourt, Ontario, Canada.

MIT Press, 28 Carleton St., Cambridge,
Mass. 02210

William Morrow & Co., Inc., 105 Madison Ave.,
New York, N.Y. 10016.

C. V. Mosby Co., 3301 Washington Blvd., St. Louis,
Mo. 63103.

Pantheon Books, 201 E. 50th St., New York,
N.Y. 10022.

Parents' Magazine Press, 52 Vanderbilt Ave.,
New York, N.Y. 10017.

Penguin Books, Inc., Maxwell House, Fairview
Park, Elmsford, N.Y. 10523.

Praeger Publishers, Inc., 111 Fourth Ave., New
York, N.Y. 10003.

Prentice-Hall, Englewood Cliffs, N.J. 07632.

Harlin Quist, Inc., 192 E. 75th St., New York,
N.Y. 10021.

Random House/Singer, Inc., 201 E. 50th St.,
New York, N.Y. 10022.

Sage Publishing Co., 275 S. Beverly Drive,
Beverly Hills, Calif. 90212.

Scott, Foresman & Co., 1900 E. Lake Ave.,
Glenview, Ill. 60025.

University of Chicago Press, 5801 Ellis Ave.,
Chicago, Ill. 60637.

University of Texas Press, P.O. Box 7819,
Austin, Texas 78712.

Van Nostrand Reinhold Co., 450 W. 33rd St., New
York, N.Y. 10001.

The Viking Press, 625 Madison Ave., New York,
N.Y. 10022.

Frederick Warne & Co., Inc., 101 Fifth Ave.,
New York, N.Y. 10003.

David White Co., 60 E. 55th St., New York,
N.Y. 10022.

John Wiley & Sons, Inc., 605 Third Ave.,
New York, N.Y. 10016.

Yale University Press, 92a Yale Station New
Haven, Conn. 06520.

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